NIPPON Signal

# REPORT 2023

NIPPON SIGNAL REPORT 2023








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### Editorial Policy

The Group publishes NIPPON SIGNAL REPORT for its customers, shareholders, investors, and other stakeholders, to provide comprehensive updates on the Group's management strategy, business activities, performance results, and financial and non-financial information.
In preparing these reports, the International Integrated Reporting Framework of the International Integrated Reporting Council and the Guidance for Collaborative Value Creation released by the Japanese Ministry of Economy, Trade and Industry were referenced, and we aim to ensure ease of understanding with regard to our business model, value creation, and ESG (environmental, social and governance) initiatives that form their basis.
In the NIPPON SIGNAL REPORT 2023, we have created content focused on the relationship between our business activities and the Sustainable Development Goals (SDGs) relevant to us, in order for more people to better understand our enhancement of corporate value by means of social contribution through products and services that we promote.

### Note on Forward-Looking Statements

NIPPON SIGNAL REPORT contains statements on the future plans, forecasts, and prospects of the Group. They reflect the predictions made by us and are based on the information available at the time this report was published. Please note that they may differ from the actual results due to the progress and circumstances surrounding future business activities.

# Nippon Signal's Main Business Domains

## From railways and stations to the cities, and Japan to the world.

The Group strives to pursue outstanding technology for "safety and reliability," while expanding our business locations.
As a company supplying a wide range of solutions to support safety and comfort, we contribute to the evolution of infrastructure.

## Transportation Infrastructure

### Railway Signal Systems

#### Remote monitoring systems



Cloud-based systems to collect, accumulate, and analyze information on railway facilities, areas along train lines, and services using wayside IoT networks and onboard imaging systems.

#### Interlocking control panel



A device that links signals and point machines in train station premises to secure safe operation of trains.

#### Automatic operation (conventional line trains)



We are developing an automatic train detector that allows safe and stable transportation on conventional lines, with the aim of realizing GoA2.5[*2] by the end of fiscal year ending March 31, 2025.

#### Communication Based Train Control (CBTC) systems



Train control systems using wireless communication, to reduce system lifecycle cost.

#### Water-resistant point machines



We strengthened the water-resistant function of simplified water-resistant railway point machine by improving the cover.

### Smart Mobility Systems

#### Bus Rapid Transit (BRT)[*1]



We provide systems to allow bus traffic in both directions to share a single lane in East Japan Railway Company's self-driving BRT.

#### Automatic operation (cars)



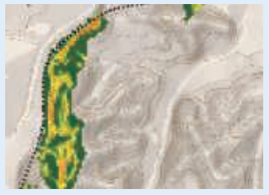
A system that connects signal information with cars using 5G to assist smooth preliminary decelerations and starting preparations.

#### Traffic lights



Controlling traffic lights using control devices, to indicate red, green or yellow signals to drivers and pedestrians.

#### Slope failure prediction technologies



Systemization of "location" prediction for slope failure, to protect transportation infrastructure from torrential rain.

#### Pedestrian supporting applications



We support people with visual impairment and senior citizens to cross roads safely using a smartphone.

*1 BRT stands for Bus Rapid Transit System.　*2 GoA2.5 is a grade of automated train operation in which an attendant, who is not a driver, is present in the cab of the first car.
*3 Developed jointly with West Japan Railway Company and Man-Machine Synergy Effectors, Inc.

## ICT Solutions

### Automatic Fare Collection (AFC) Systems

### Platform safety monitoring systems via image analysis



A system to detect hazard on station platforms using image processing devices attached to existing surveillance cameras.

### Smart City Systems

### Multiple handling vehicle[*3]



Humanoid robots for work at height aimed at eliminating heavy-lifting work from railway maintenance operations and improving its efficiency.

### Platform screen doors



We ensure safety and security on platforms, with a wide range of Platform screen doors to fit various types of stations and vehicles.

### Automatic passenger gates



We participate in verification tests for facial recognition passenger gates, which is a step toward future applications of ticketless passenger gates.

### Automatic floor cleaning robots



These robots clean floors unattended, accurately detecting peripheral obstacles using lasers and ultrasound sensors.

### Security gates



We provide total security environments that are people-friendly, from entry and exit systems for people and vehicles, to office security.

### Multilingual ticket vending machines



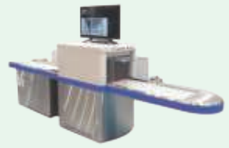
We provide clear and user-friendly multilingual automatic ticket vending machines and information display systems for stations.

### Parking lot management systems



We provide a range of devices and solutions, including the PARK-LOC® system and network-linked payment machines.

### Automatic X-ray baggage checking equipment



This checking equipment adopting world's first compact X-ray source, precisely and speedily detects the presence of dangerous items.

### Ground penetrating radars



Detecting underground cavities and buried objects using underground sensing technology that applies radio wave and communication technologies.

## Works of Group Companies

### Nursing care robots



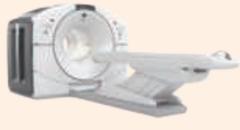
Users can step on this equipment from the back, a novel riding style, to enjoy free mobility.

### Magnetic resonance imaging units



Providing leading-edge medical devices that use magnetic force to capture cross-sectional images of a living body to support high-precision diagnoses.

### Computed Tomography



Providing leading-edge medical devices that detect microscopic lesions with high clarity using advanced digital technology.

### Solar power generation



Contributing to accelerating the spread of clean energy by installing solar power generation systems on building rooftops.

# History of Innovation

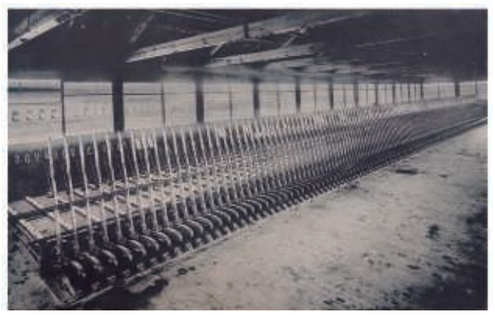
## Pursuit of New Pinnacles of Safety, Accuracy, Comfort, Speed and Volume

The history of Nippon Signal is also the history of a continuous pursuit of innovation, and the history of the evolution of Japan's transportation infrastructure. Commitment to further innovation is the unchanging DNA of the Group that has been passed down from our founding until today.

Value created by Nippon Signal

1928-1950s

### Foundation of Nippon Signal and Modernization of Railway Signals



The Railway Nationalization Act, promulgated in 1906, nationalized major thoroughfares throughout Japan, and transportation demand saw a sharp spike thereafter. Nippon Signal Co., Ltd. was established in December 1928 via a merger of three companies, and was tasked with modernizing and realizing domestic production of railway signals.

Photograph: a mechanical interlocking system delivered to Kyoto Station in 1914. Reproduced from a Mimura Factory postcard (Railway Museum collection).

**1929** A technical collaboration agreement with General Railway Signal Company of the United States is concluded with the aim of achieving domestic production of world-leading signal equipment.



**1931** Made-in-Japan traffic signal equipment is produced and installed at the Nihonbashi, Gofukubashi, and Sakurabashi intersections.



**1958** Production of parking meters commences.

1960s-1980s

### Evolution of Electronics Technologies and Start of New, Forward-Looking Businesses



The opening of the Tokaido Shinkansen marked the beginning of a new era, and the Company's electronics technologies proceeded to evolve in the Automatic Train Control (ATC) and Centralized Traffic Control (CTC) systems used for the Shinkansen. We contributed to the development of Japan's transportation infrastructure by creating various new products geared toward the needs projected to arise in the future as post-Shinkansen businesses are developed.

**1963** Production of Pasca 205 miniature commercial calculator commences.

**1964** ATC and CTC systems produced by Nippon Signal are adopted for use on the segment of the Tokaido Shinkansen Line connecting Tokyo Station and Shin-Osaka Station.

**1970** Production of PARK-LOC® system commences.

**1972** Production of Japan's first comprehensive automated ticket gate system commences and this system is installed for use on the segment of the Sapporo Municipal Subway connecting Kita-Nijuyo-Jo Station and Makomanai Station.



**1984** An automatic boarding control system for aircraft is developed.

1990s-2010s

### Technological Progress and Network Business Development



The transition from analog technologies to digital technologies and from hardware to software enable Nippon Signal to acquire technologies for realizing high-speed processing of massive quantities of data. With these technologies, we contribute to the dense, on-time operation, and complex interoperable equipment of railways, to support the mobility of 40 million people living and working in the Tokyo metropolitan area.

**1998** Production of the Eco Scan® microelectromechanical system optical scanner commences.



Eco Scan®, microelectromechanical system optical scanner

**2003** The Visionary Business Center is established to facilitate the creation of new products and new businesses.

**2007** Mutual use of common IC cards (Suica and PASMO) commences, and Nippon Signal performs upgrades to all automatic passenger gates.

**2009** The Overseas Division is established to boost competitiveness in overseas markets.

**2009** Order-taking and manufacturing of platform screen doors commence on a full scale.

2011~

### Acceleration of Global Expansion and Start of New Long-Term Management Plan



Leveraging the technological prowess it cultivated in Japan, Nippon Signal accelerates global expansion efforts centered on Asian and other emerging countries. In these efforts, we focus on the development of systems compatible with the Mobility as a Service (MaaS) revolution and new digital transformation.

**2011** The SPARCS (Simple-structure and high-Performance ATC by Radio Communication System), the first wireless train control system in the world, is developed and put into use on the Beijing Subway Line 15.

**2017** The ANSHIN* Center is established to provide IoT platform base functions.

**2017** SPARCS is installed on the Delhi Metro Line 8 (Magenta Line).

**2018** The CLINABO® automatic floor cleaning robot is developed.



CLINABO® automatic floor cleaning robot

**2019** Nippon Signal participates in verification tests and projects related to the provision of signal information to self-driving vehicles.

**2020** Set a self-driving verification section on the Kashii Line, Kyushu Railway Company.

**2021** Won the Award of Excellence of the Public Construction Golden Quality Award.

**2022** Dhaka Mass Rapid Transit (MRT) Line 6 of Bangladesh commenced operation.

### Major events especially in the railway industry

1928-1950s

- Opening of the section of the Tokyo Underground Railway between Asakusa and Shimbashi
- Opening of the section of the Osaka Municipal Subway between Namba and Tennoji
- Establishment of the Teito Rapid Transit Authority (TRTA)
- Opening of the Kanmon submarine tunnel, the world's first undersea tunnel
- Establishment of Japanese National Railways (JNR) (a railway business transferred from the Ministry of Transport)
- Electrification of the Senzan Line is completed, and operation commences

1960s-1980s

- Tokyo Monorail commences operation
- The Tokaido Shinkansen Line commences operation
- The Sanyo Shinkansen Line commences operation
- Modernization of power is completed for JNR main lines (total abolition of steam locomotives)
- The Tohoku Shinkansen and Joetsu Shinkansen Lines commence operation
- Privatization and division of JNR into each JR company
- Opening of the Seikan tunnel (Seikan ferry services are abolished, and the Tsugaru-Kaikyo Line commences operation)

1990s-2010s

- Birth of the Tokaido Shinkansen "Nozomi"
- The Yamagata Shinkansen (a mini-shinkansen running on converted narrow-gauge railway lines) commences operation
- Driverless trains commence operation on the Tokyo Waterfront New Transit Waterfront Line (Yurikamome)
- The Nagano Shinkansen (from Takasaki to Nagano; later part of the Hokuriku Shinkansen) commences operation
- Okinawa Urban Monorail, the first railway in Okinawa since the end of the Second World War, commences operation
- The Kyushu Shinkansen (from Yatsushiro to Kagoshima Chuo Station) commences operation
- Toyama Light Rail commences operation
- Taiwan High Speed Rail commences operation

2011~

- The Kyushu Shinkansen (Kagoshima route) commences operation on all sections
- Cruise Train "Seven Stars in Kyushu" commences operation
- 50th anniversary of the opening of the Tokaido Shinkansen
- The Hokuriku Shinkansen (Kanazawa extension) commences operation
- The Hokkaido Shinkansen commences operation
- Okinawa Urban Monorail extension commences operation
- Takanawa Gateway Station on JR Yamanote Line opens
- The Nishi Kyushu Shinkansen (from Nagasaki to Takeo-onsen) commences operation

# Value Creation Process

The Group is engaged in new value creation to contribute to "solving social issues" and "advancing infrastructure," through value chains founded on "safety and reliability," while keeping an eye on global environmental changes.

We aim to achieve sustained growth by accelerating the process of development and real-world implementation of products that are suited to the market needs, carrying out business structure reforms, and strengthening our business foundation.

## Group Philosophy

### Our Mission

We help realize a more secure and comfortable society through superior technologies that provide safety and reliability.

### Our Vision

We strive to become a global company by pursuing world-leading technologies with ingenuity and passion to inspire our customers' *Kando*.*

* *Kando* is a Japanese word that describes the sense of awe and the emotion you feel when experiencing something beautiful and amazing for the first time. It is the moment when your expectations are exceeded – you feel *Kando*.

### Our Values

1. Emphasize "safety and reliability" above all. ...*Mono-zukuri* (Manufacturing)
2. Strive to improve customer value by taking the customer's perspective. .....*Koto-zukuri* (Business)
3. Take on challenges for your own growth..... *Hito-zukuri* (Education)
4. Preserve the environment and contribute to the development of local communities. ..... *Machi-zukuri* (CSR)
5. Have dreams and share them. ...*Michi-zukuri* (Creation of the future)

Our Code of Conduct

### Our Code of Conduct: Six Commitments

1. Working for Customers' *Kando*
2. Fair Corporate Activities
3. Proper Information Disclosure and Communication with Society
4. Respect for Human Rights and Creation of a Good Working Environment
5. Environmental Protection and Proactive Social Contribution Activities
6. Proper Management of Company Assets and Information

## INPUT

As of March 31, 2023

**Financial capital**

Shareholders' equity **79.2** billion JPY

Interest-bearing debts **17.5** billion JPY

**Manufactured capital**

Capital investment **2.6** billion JPY

**Intellectual capital**

R&D expenses **2.8** billion JPY

**Human capital**

Number of employees **2,987**

Human capital investments (non-consolidated) **79** million JPY

**Social and relationship capital**

Nippon Signal operation coverage

**30 countries and regions**

## Business Activities




Growth Strategy

**Long-Term and Medium-Term Management Plans** ➡P9

Strengthening the Foundation Underpinning Sustained Growth

**Sustainability Initiatives** ➡P27

## OUTPUT
## Business Domains



Railway Signal Systems



Smart Mobility Systems



**Automatic Fare Collection (AFC) Systems**
(Station Network Systems)



Smart City Systems

## OUTCOME
## Value provided to society

### Contribution to the SDGs




➡P27

# To Our Stakeholders






With our new employees in April 2023

With the downgrading of COVID-19 to a Class 5 infectious disease under the Japanese Infectious Diseases Control Law after approximately three and a half years, we have now entered a new phase of balancing measures to prevent the spread of infection with economic activities. As restrictions on movement have been eased this year, more events of various kinds are returning from online to the real world, and demand for both domestic and inbound tourism is on the rise. As people start to move around more, we can expect a return of the energy of pre-pandemic times. On the other hand, in this increasingly complex era, new challenges are emerging one after the other. Examples include changes in the environment surrounding the international economy and society, particularly the prolonged situation in Ukraine, responses to soaring consumer prices caused by energy shortages, and decarbonization efforts in response to climate change. In the era of new normal, in which increasing complexity has become normalized, the Group will work to realize sustainable growth and development and the enhancement of corporate value.

## FY2022 and the Status of the New Medium-Term Management Plan (Next Stage 24)

In FY2022, the first year of the New Medium-Term Management Plan (Next Stage 24), we worked on the following four pillars of our management strategy:

- **Collaborative value creation with customers after COVID-19 pandemic**
- **Expansion of international business and improvement of profitability**
- **Enhanced design prowess and manufacturing prowess in the era of software first**
- **Promotion of ESG (environmental, social and governance) Management for sustained value creation**

In the area of collaborative value creation with customers, we developed new products and services that use digital technologies, such as automation, wireless, cashless, and robotics, and pursued the real-world implementation of new technologies in various parts of Japan. For the latter, we received an order for a system for demonstration testing of SPARCS (wireless train control system) that uses existing train information systems, we delivered a wireless system to allow bus traffic in both directions to share a single lane as a technology to support self-driving BRT, and we conducted demonstration trials of a fare service using credit card touch payments and QR codes. In the area of robot development, we invested in Man-Machine Synergy Effectors, Inc., a startup company that originated in Ritsumeikan University. We will continue to accelerate the commercialization of our multiple handling vehicle, which aims to eliminate the social issue of heavy labor and dangerous work in railway maintenance.

In our international business, we won orders for several major overseas projects, including a signal system for Delhi Metro Line 8 Extension Corridor in India, a signal system and Platform Screen Door (PSD) System for Cairo Metro Line 4 of Egypt, and a signal system for Metro Manila Subway Project in the Philippines. In addition, we established a new company in Dhaka, the capital city of Bangladesh, as the Group's fourth overseas subsidiary. We will strive to strengthen our locally-based efforts to win orders, including the establishment of maintenance businesses, and to enhance profitability.

## To Our Stakeholders

In design and manufacture, the Group continues to feel the effects of the protraction of procurement lead times of semiconductor chips and other components and the ongoing sharp rises in material prices caused by global inflation. However, we are working to minimize the impact of these trends through design changes and the thorough pursuit of process management.
As a company involved in transport infrastructure, a business of a highly public nature, the Group aims to contribute to society through the reduction of environmental impact and the building of safe communities. To this end, we have joined the TCFD Consortium, planted the Forest of Nippon Signal, and promoted ESG Management, including obtaining recognition as a Certified Health & Productivity Management Outstanding Organization and as a Digital Transformation Certified Company.

| | Previous year (FY2021) | Results (FY2022) | Targets (FY2023) |
|---|---|---|---|
| Net sales | 85.0 billion JPY | 85.4 billion JPY | 95.0 billion JPY |
| Operating margin | 6.3% | 6.0% | 6.3% |
| ROE | 5.3% | 4.6% | 5% or more |
| Equity ratio | 64.7% | 61.2% | Around 60% |

## Next Stage Accelerating Real-world Implementation Efforts Toward FY2023

### Priority Strategies

#### 1 Collaborative value creation with customers after COVID-19 pandemic

- Market new products that solve customers' management issues
- Enhance capacity to propose eco and power solutions



#### 2 Expansion of international business and improvement of profitability

- Roll out maintenance businesses that have roots in local communities
- Enhance profitability of line extension projects



#### 3 Enhanced design prowess and manufacturing prowess in the era of software first

- Improve cost ratios, curb inventory assets, and reduce costs without reward
- Reduce ST/LT* by improving drawing re-use rates



### Sustained Value Creation

#### Promotion of ESG Management for sustained value creation

**E:** Development of energy-saving products and sales of decarbonization solutions
**S:** HR system reforms and promotion of health management
**G:** Strengthening risk management and global capabilities

- Promotion of introduction of next-generation core systems
- Re-organization of Group company functions
- Strengthening human resources development



*ST/LT: Standard time/Lead time

## To Our Stakeholders




### Basic Policy and Priority Strategies of "Next Stage 24" Performance

**Basic Policy**

**[Supporting the Next Stage of Infrastructure]**
Real-world implementation of transport innovation through digital technologies and acceleration of establishment of local operations overseas

**Numerical Targets**

**FY2024**
**Net sales: 130.0 billion JPY**
**ROE 10%**

**Environmental Goals**

**Greenhouse gas emissions:**
**50% reduction (2030)**
**Net zero (2050)**

**Priority Strategies**

1 **Collaborative value creation with customers after COVID-19 pandemic - Product transformation with DX**
- Expand solutions business and develop products to support customers' structural reforms
- Be thoroughly customer-oriented and strengthen marketing and proposal capabilities

2 **Expansion of international business and improvement of profitability - Sustainable, long-term business development**
- Business development rooted in megacities, promotion of location strategies
- Streamline and strengthen global capabilities

3 **Enhanced design prowess and manufacturing prowess in the era of software first - Manufacturing reform to support business transformation**
- QCD optimization from design process, strengthening of Group capabilities and in-house production
- Strengthening of development capabilities and establishment of design and production frameworks adapted to DX

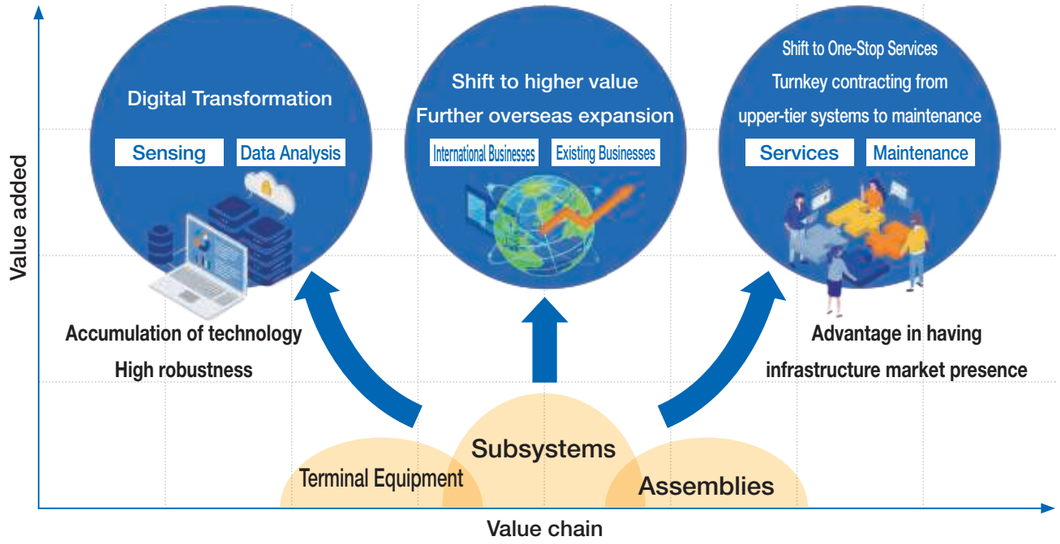
**Sustained Value Creation**

**Promotion of ESG (environmental, social and governance) Management for sustained value creation**

**E:** Participation in TCFD, promotion of decarbonization
**S:** Promotion of diversity, health management, and sustainability
**G:** Sustainable reinforcement of corporate governance and compliance

- Promotion of introduction of next-generation core systems
- Re-organization of Group company functions
- Strengthening human resources development

### Stages of the Group's Value Chain Vision




## Toward the 100th Anniversary

In 2022, Japan's railways marked the 150th anniversary of the opening of the railway between Shimbashi and Yokohama. The Group has a long history, providing railway and traffic signals for the past 90 years and automatic passenger gates for 50 years. Our PARK-LOC® (flap-type parking lot management system), the first to be developed in Japan, is also more than 50 years old. In that time, the Group has responded to society's and customers' needs for safe and reliable "fail-safe technologies" and engaged in collaborative value creation.

In our Long-Term Management Plan, which has 2028, the 100th anniversary of Nippon Signal's foundation, as its target, we believe that, for us to solve the continuously changing issues of society, in addition to firmly passing on our safety ideology and technologies, we must also take on the challenge of making change happen with digital transformation (DX). Going forward, we will tackle the reduction of fixed costs through compact, power-saving, and cableless technologies, flexible software-based responses, and the expansion of new businesses such as automatic operation and robotics.

Further, last year, we announced that we had invested in &Capital Inc., an African impact fund* management company. As a company involved in social infrastructure, the Group has long contributed to solutions to social issues in Africa. Going forward, through our investment in &Capital, we will continue to provide assistance to African nations in many areas, including agriculture, healthcare, infrastructure, and energy, while also striving to develop the Group's international business.

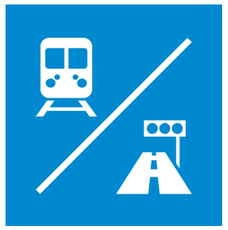
*Impact fund: A fund that makes impact investments, that is, investments that have the dual intents of making a positive impact on the environment and social issues and achieving economic returns.

## Conclusion

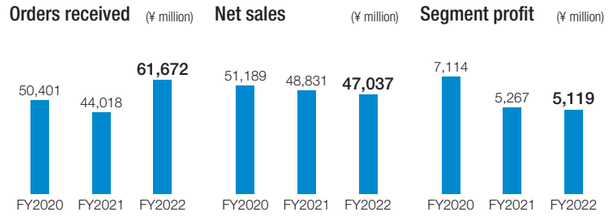
Under the Group's corporate philosophy, our mission is "to help realize a more secure and comfortable society through superior technologies that provide safety and reliability." Taking on board the thoughts and wishes of our stakeholders, we will continue to grow in our challenge, without fear of failure, to achieve a secure and comfortable society.

# Business Strategy

## FY2022 Transportation Infrastructure








### Railway Signal Systems

**Main Areas of Business**
- Automatic Train Control (ATC) devices
- Automatic Train Stop (ATS) devices
- Centralized Traffic Control (CTC) devices
- Electronic interlocking devices
- Level crossing protection devices
- Display devices
- SPARCS (wireless train control system), etc.

In Railway Signal Systems, in the Japanese market, we received orders and recorded sales related to various signal safety devices, including Automatic Train Control (ATC) systems and Centralized Traffic Control (CTC) devices.
We are also accelerating our business activities toward the real-world implementation of Traio, a system to monitor the status of railway facilities, as solutions to support customers' structural reforms in the COVID-19 era.
In addition, we are receiving more and more inquiries for the Simple-structure and high-Performance ATC by SPARCS (wireless train control system) that contributes to efficient operation of trains, streamlining of facilities, and labor-saving. We have received an order to design a system for a demonstration trial on the SEIBU RAILWAY Tamagawa Line.
In overseas markets, we received orders and recorded sales in the Philippines, India, and China. We will contribute to the creation of comfortable and safe communities through traffic infrastructure by increasing sales of SPARCS and meeting infrastructure demand in Asian countries, based on our installation track record in these markets.
In terms of future initiatives, with the aim of collaborative value creation with customers in the COVID-19 era, we will work to develop products that address and take into account the social issues of a declining workforce, natural disasters, and decarbonization. We will focus on fields such as SPARCS, which contributes to reduce $CO_2$ emissions, as well as remote monitoring/CBM and labor-saving that contribute to reduce fixed costs and operational costs.



### Smart Mobility Systems

**Main Areas of Business**
- Traffic control systems
- Traffic lights control systems
- Traffic lights
- Mobile Virtual Network Operator (MVNO)
- Pedestrian Information Communication Systems (PICS), etc.

For Smart Mobility Systems, particularly Road Traffic Safety Systems, we received orders for and recorded sales of MVNO (network leasing services) that are being rolled out across Japan and the renewal of traffic control systems.
In addition, to support people with traffic constraints such as those who are visually impaired, in crossing intersections, we have commercialized advanced PICS, which provide signal information from pedestrian lights to smartphones through devices that are installed at intersections. We will continue develop solutions with a view to realizing barrier-free access for people with traffic constraints.
In terms of upcoming initiatives, we will work on product development and commercialization aimed at the real-world implementation of KURU LINK®, where self-driving public transportation vehicles connect departure points and transport hubs, such as train stations, as well as transport hubs and destinations, and automated operation-related services that are based on coordination between infrastructure, such as traffic lights, and self-driving vehicles.

## Medium-Term Management Plan "Next Stage 24"

### Railway Signals



**Vision/Target**

**Providing solutions to support structural reforms**

**Main Strategies**

**Existing market strategy**
Streamlining of equipment such as SPARCS (wireless train control system), creation of added value such as train priority signal control on LRTs, more advanced functions/disaster response for point machines and crossing gates

**Platform strategy**
Expansion of AI maintenance and CBM*
Real-world implementation of automatic operation systems

**Developing the Eco & Power Solution Market**
Developing new technologies/fields, such as labor-saving solutions in the electricity substation area and vibration power generation

**Strategic products**


AI maintenance


SPARCS
(wireless train control system)


LRT

*CBM: Condition Based Maintenance. An operation and maintenance approach in which use continues to the extent that safety is not affected, and repair or replacement is undertaken at the appropriate time.

### Smart Mobility



**Vision/Target**

**High value adding through self-driving assistance, etc.**

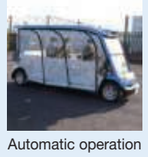
**Main Strategies**

**Establishing business models in the self-driving market**
Standardization and business development of I2X (road-to-vehicle collaborative automatic operation system)
Real-world implementation of last one mile travelling support service, KURU LINK®

**Existing market strategy**
Conversion of local railway lines to Bus Rapid Transit (BRT)
Product improvement for energy saving

**Platform strategy**
Creating added value through Mobile Virtual Network Operator (MVNO), pedestrian assistance, etc.

**Strategic products**


Automatic operation


MVNO


BRT

Crossroads networking

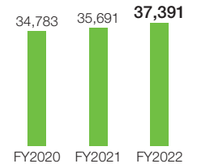


## Business Strategy

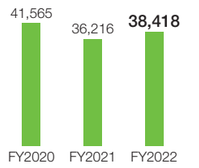
# FY2022 ICT Solutions

Net sales contribution 45.0%

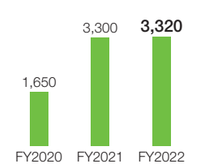
**Orders received** (¥ million)




**Net sales** (¥ million)




**Segment profit** (¥ million)






### Automatic Fare Collection (AFC) Systems

**Main Areas of Business**
- Automatic passenger gates
- Automatic ticket vending machines
- Automatic fare adjustment machines
- Platform screen doors
- Gated parking lot management systems
- Centralized payment PARK-LOC® parking lot management systems, etc.

In AFC, particularly Station Network Systems, in the domestic market, we received orders for and recorded sales of various types of platform screen doors, passenger gates, and ticket vending machines.
Various railroad operators are considering their platform door installation plans, utilizing the fare system to promote barrier-free facilities at train stations led by the Ministry of Land, Infrastructure, Transport and Tourism. We are expanding our business activities by leveraging our strengths in areas such as platform screen doors and platform monitoring equipment, in which we offer a diverse lineup to meet the needs of each installation location.
In addition, as initiatives for the future, we are working to develop new platform monitoring systems that reduce costs for capital investment and make use of 3D laser ranging image sensors and low-cost platform screen doors, among other things.
In overseas markets, we received orders for and recorded sales of AFC systems and others in Bangladesh and Egypt.
In terms of upcoming initiatives, the markets for cashless payment systems and image processing are expected to expand in anticipation of full-scale development of MaaS. To accommodate payment systems in the new smart mobility society, we will bring new products onto the market and create new businesses.



### Smart City Systems

**Main Areas of Business**
- Security gates
- Automatic cleaning robots
- 3D Laser Ranging Image Sensor
- Ground penetrating detection radars
- OA devices (maintenance), etc.

In Smart City Systems, particularly Security System Solutions, we received orders for and recorded sales of various types of security products and robot products, mainly 3D laser ranging image sensors to be installed in platform screen doors, construction and agricultural equipment.
Furthermore, we have promoted sales of security gates, which provide a one-stop solution for managing the entry and exit of people and vehicles, mainly in amusement facilities and museums where an indefinite large number of people go in and out.
In terms of upcoming initiatives, we aim to commercialize our multiple handling vehicle, which is a humanoid robot for railway work in high places, in spring of 2024, with the aim of eliminating the social issue of heavy labor and dangerous work on site.
We will enhance our line-up of security gates that accommodate new technologies such as facial recognition and contactless technologies and work on the development of various types of robots by leveraging the knowledge gained from cleaning robot development.

## Medium-Term Management Plan "Next Stage 24"

### AFC business



**Vision/Target**

**Solving customer management issues and realizing MaaS**

**Main Strategies**

**AFC business**
Real-world implementation of flexible fare determination
Providing a wide variety of payment methods and MaaS (mobility support, reservations, payment services, etc.)

**Safety on Platforms**
Development and deployment of lightweight platform screen doors and platform monitoring devices
Improved serviceability with CBM

**Smart Parking**
Development of new fields through management support for operators and gateless/flapless systems
Promotion of low carbon emissions, such as development of products for electric vehicles

**Strategic products**


Platform monitoring




Cashless payment system devices

### Smart City business



**Vision/Target**

**A new growth pillar**

**Main Strategies**

**Robotics**
Development and real-world implementation of heavy machinery and cleaning robots
Developing markets for service robots such as security/inspection robots

**Sensing**
Entry into the construction machinery market and development and deployment of omnidirectional sensors

**Security**
Deployment of facial recognition gates and development of high security market

**Strategic products**



Cleaning robots


3D Laser Ranging Image Sensor


Baggage inspection

# Feature: Growth Strategy of the Company

## Focus 1 | Automatic Operation

## Toward Next-generation Transit Services for the Last One Mile

# KURU LINK®

**KURU LINK® is a last one mile* transit service using self-driving vehicles that is centered on railway stations and other transport hubs. Using a system that links users, self-driving vehicles, and ground equipment (infrastructure), with a control center at its core, it realizes one-stop solutions for dispatch or reservations of vehicles to come to one's home or for linking railway stations and residential areas with self-driving mobility vehicles.**
**Pilot operations and verification testing are currently being undertaken to resolve business-related and technological issues with the aim of early real-world implementation and contribution to the revitalization of regional areas. This feature article presents the three mechanisms that underpin KURU LINK®.**

* Last one mile: Refers to the last section from the closest public transport to the final destination (home, sightseeing spot, etc.). With the progression of the aging of society and depopulation, this last one mile is being seen as a challenge for future public transport services.

## 1 Operation management system

The operation management system will be responsible for managing the condition of system operations and ground equipment. A web server system will be built in a control center, the main feature of which is vehicle service management, in which the travel positions of self-driving vehicles will be plotted on a digital map in real time. Monitoring on the web browser will assist operation managers by giving them visual recognition of the various service conditions, while users will be provided with information via digital signage at railway stations, smartphones, and other means. It will also be equipped with the following systems to suit the needs of operation managers (public transport providers).

### ▶ Timetable management system

On-time operation will be achieved by automatically instructing the self-driving vehicles to start driving in line with the scheduled timetable. Listing them alongside the achieved timetable will give a full picture of service status.
Timetables are an intuitive user interface on which changes, increases in services, and other operations can be performed.


Urawamisono: Verification test

### ▶ Railway link system

The service can be linked to delays in railway timetables to automatically generate self-driving vehicle timetables. Alternatively, the number of services can be increased automatically to maintain on-time operational service levels. Railway delay information will be obtained from external systems via GTFS-RT[*1].

*1 GTFS-RT: An information format that is included in the global standard bus information format "GTFS" and provides dynamic data that can be used to predict delays and arrivals.


Kuki Plant compound: In-house verification

### ▶ Shared single-lane traffic system

Right of way will be controlled on traffic sections in which a single lane is shared by vehicles traveling in both directions, based on the respective location data of self-driving vehicles and manually operated vehicles, and the information will be provided as signal data on virtual traffic lights[*2] and on-board tablets, to achieve efficient use of mixed-use spaces and safe shared single-lane traffic.

*2 Virtual traffic lights: Software-based traffic lights that control right of way without the installation of physical traffic lights.


Kesennuma Line BRT: Verification test

### ▶ Automated Valet Parking (AVP)

In parking lots, automatic parking and dispatch of vehicles can be achieved via a smartphone app operated by the user, thus increasing convenience for parking lot users. The Automated Valet Parking system provides the best route to the parking lot and parking/dispatch instructions to the self-driving vehicle through the use of a smartphone app, allowing for unattended automatic travel inside the parking lot. We plan to expand the scenarios for use of this system to businesses such as automatic dispatch/parking of self-driving car share vehicles and automated truck deliveries.


Keihanna: Verification test

## 2 Remote monitoring system

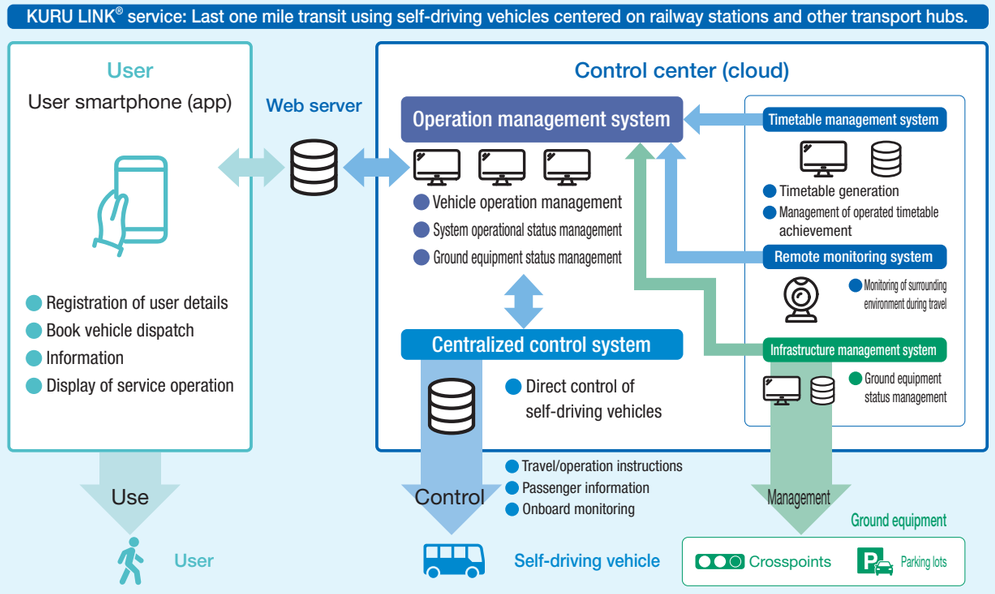
Cameras and microphones installed on the self-driving vehicles will capture video and audio of inside and outside the vehicle, allowing the situation inside and around the vehicle to be monitored in real time on a web browser at the (remote) control center. The system will also receive speed and situational data from the self-driving vehicles to ascertain the condition of the vehicle, and by talking to passengers, it will be possible to monitor the vehicle and its passengers comprehensively from a remote location.


Urawamisono: Verification test

## 3 Infrastructure development to support safety (I2X* coordination)

* I2X: Road-to-vehicle collaborative automatic operation system

With the development of infrastructure for sensing in zones where various different vehicles intersect, such as crosspoints and parking lots, safety support will be realized in line with the traffic situation, such as notifying self-driving vehicles of hazard information. As of March 31, 2023, Nippon Signal had participated in 45 verification tests on public roads of road-to-vehicle collaborative systems. This is the most for any infrastructure manufacturer in Japan.




### Verification test of KURU LINK® service in Urawa-misono area





Timetable management system




Operation management system


Remote monitoring system

Feature: **Growth Strategy of the Company**

## Focus 2 | Global Network

# Main Themes of International Businesses

We will strive to enhance profitability through various efforts, from the performance of projects to ongoing business development through maintenance services, extension projects on existing railways and market development, as well as business development rooted in megacities.

Initiatives

1. **Promotion of megacities strategy leveraging overseas subsidiaries**
2. **Receipt of definite orders and smooth implementation of Phase 2 projects in cities where the Group already operates**
3. **Expansion of maintenance businesses rooted in individual regions**

Our international businesses began with the export of level crossing gates to the State Railway of Thailand in 1946, and we now provide Japanese transport infrastructure to 30 countries and regions. In addition to the Delhi Metro Line 8 (Magenta Line), for which SPARCS (wireless train control system) was adopted and which began fully unattended operation in 2020, our signal systems and AFC systems have been adopted in major cities including Chennai, Jakarta, and Dhaka. With these products, we will continue to pursue the development of our global network aggressively and contribute to the economic development of countries around the world.

## 30 countries and regions

Egypt
- Cairo Metro Line 4 Signal and PSD systems

Liberia
- Traffic signal equipment in Monrovia

Uganda
- Traffic signal equipment in Kampala



UAE
- Dubai Monorail



India
- Indian Railways
- Delhi Metro Magenta Line
- Chennai Metro
- Ahmedabad Metro
- Bengaluru Traffic signal systems


Ahmedabad Metro SPARCS (wireless train control system)


Chennai Metro Automatic ticket vending machines


Delhi Metro Magenta Line SPARCS (wireless train control system)

Turkey
- Turkish Railways


Izmir suburban line


Izmir suburban line operation management system

Bangladesh
- Dhaka MRT Line 6


Dhaka MRT Line 6 SPARCS (wireless train control system)


Dhaka MRT Line 6 Automatic passenger gate

Myanmar
- Myanmar Railways
- Traffic control system in Yangon

Thailand
- State Railway of Thailand
- Bangkok Red Line

China
- Beijing Subway Line 15
- Beijing Subway Airport Express Line
- Beijing Subway Line 13
- China State Railway Group Co., Ltd.


Beijing Subway Line 15 SPARCS (wireless train control system)


Beijing Subway Line 13 Automatic passenger gates

Korea
- Busan Metro
- Gimpo Goldline
- Gwangju Metropolitan Rapid Transit
- Parking system for Rep. of Korea


Gimpo Goldline SPARCS (wireless train control system)

Taiwan
- Taiwan Conventional Rail
- Taiwan High Speed Rail
- Taiwan MRT Circular Line
- Parking system for Taiwan


Taiwan High Speed Rail


Conventional Rail


Taipei Station CTC Center


AFC systems

Vietnam
- Line 1 of the Ho Chi Minh Urban Railway

Philippines
- Manila Subway Line Signal system

Indonesia
- Railways in Indonesia
- Jakarta Mass Rapid Transit (MRT)


Jakarta Mass Rapid Transit (MRT) SPARCS (wireless train control system)


Jakarta Mass Rapid Transit (MRT) automatic passenger gate

Argentina
- Argentine Railways (ADIF, SOFSE)


Roca Line


Roca Line Interlocking system

UK
Spain
Algeria
Iraq
Iran
Pakistan
Saudi Arabia
Tanzania
South Africa
Nippon Signal Bangladesh Private Limited
Dhaka Office
Yangon Office
Nippon Signal India Pvt. Ltd.
Beijing Nippon Signal Co., Ltd.
Taipei Office
Nippon Signal Technology Taiwan Co., Ltd.
United States
Panama
Brazil
Australia
New Zealand

## Dhaka Mass Rapid Transit (MRT) Line 6 in Bangladesh commenced operation (December 28, 2022)

Nippon Signal delivered three systems, namely a signal system, AFC, and platform screen door (PSD), to Bangladesh's first metro in Dhaka, the capital city of Bangladesh. For the signal system, our SPARCS (wireless train control system), which uses wireless communications to control and protect the trains, was adopted, and automatic operation has been achieved. This is our sixth delivery of SPARCS.
In November 2022, we established Nippon Signal Bangladesh Private Limited. In addition to providing any maintenance and support services included in the contracts for the above project, this new company will be our base for engaging in long-term business development in Bangladesh, where vigorous infrastructure investment is expected to continue, in our efforts to further expand our business.


Signal systems


PSD systems


AFC systems

Railway Signal Systems
Automatic Fare Collection Systems
PSD
Smart Mobility Systems
Smart City Systems

Feature: **Growth Strategy of the Company**

## Focus 2 | Global Network

# Traffic Lights Businesses Initiatives in Uganda

As a company involved in social infrastructure, Nippon Signal has long been engaged in business activities with a strong awareness of contributing to solutions to social issues in Africa. In March 2023, we received an order for traffic signal systems terminal equipment for the Project for Improvement of Traffic Control in Kampala City, Republic of Uganda. Leveraging the signal technology that we have built up over the years, we are cooperating in the construction of transport infrastructure that is critical for Uganda's development.



Traffic lights introduced to Uganda by Nippon Signal

## Urban infrastructure in Kampala City, Uganda

Kampala City is the capital city of the Republic of Uganda (population: approximately 1.6 million as of 2020), located in East Africa. The city's metropolitan area was almost completely destroyed in the civil war that followed the collapse of the dictatorship in 1979. Since then, social infrastructure has recovered considerably as a result of reconstruction assistance. On the other hand, a variety of issues have arisen as the result of the rapid growth in the city's population in recent years. In particular, the fragility of the city's transportation infrastructure, especially its roads, has become a serious problem. Chronic traffic congestion makes it difficult to travel comfortably, and poor road conditions have worsened the living and natural environment along the roads. Under these circumstances, Japan has been providing a range of assistance, including grants and yen loans, to Uganda to build transportation infrastructure that will support the nation's future development.

## State of development of roads and traffic lights

In Kampala's inner-city areas, some major roads have been developed, but most of the road network remains undeveloped. In addition, even on roads that have been paved, the surface quality is not good. Moreover, the city's geographical and climatic conditions, such as its location directly on the equator and its four to five months of heavy rainfall every year, cause further deterioration of road surfaces and the surrounding environment.
Most intersections do not have traffic signals, with roundabouts used instead to diverge and merge traffic flow. Residents are unable to travel safely or comfortably by any mode of transport, whether it be by car, motorcycle taxi or bus. Another issue is that when roadworks are conducted, major congestion occurs, further exposing the weaknesses of the transportation infrastructure.

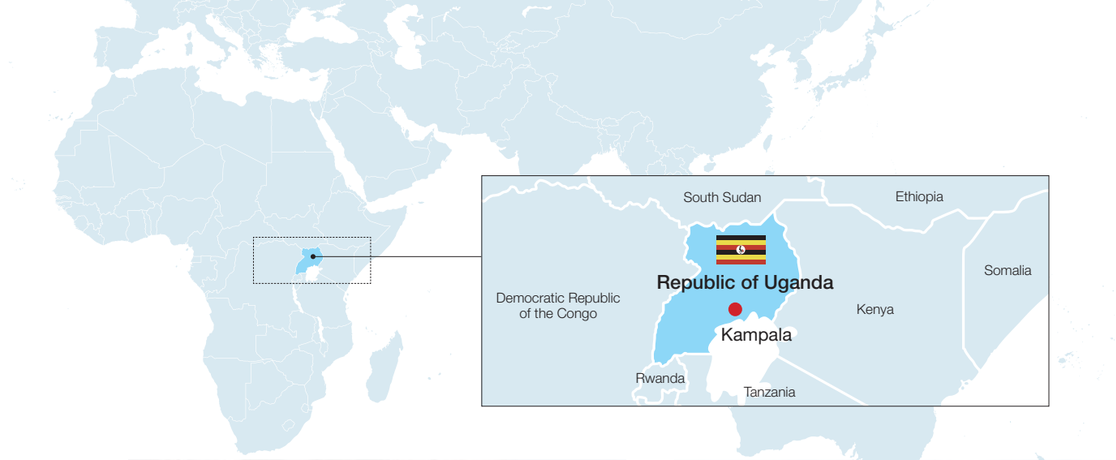
### Road conditions in Kampala City



Condition of relatively well-developed inner-city roads (locations where Nippon Signal traffic lights have been installed)



Undeveloped road surfaces






One of the many roundabouts found throughout the city



An intersection where road maintenance has not been completed and signal controllers have not been installed

## Track record in Uganda

We delivered traffic light equipment for four intersections in 2018 under the pilot project (JICA grant Phases 1 and 2) and, in 2019, we delivered a central control system and the Moderato*1 system to Kampala City for KCCA*2. These achievements were well received, and in 2021, Nippon Signal delivered traffic signal equipment for nine intersections to Kampala City through a local company (construction and maintenance company) under the KIIDP2*3 project funded by the World Bank.
In this project, we plan to deliver traffic lights, traffic signal control equipment, traffic detection equipment, and other products for 25 intersections in FY2024.
Infrastructure development in Uganda is expected to expand even further in the years ahead. We will continue to collaborate with the Japanese government, local governments, and local companies to improve the capacity of traffic flow management and ease traffic congestion in Kampala City through highly reliable traffic signal products. In doing so, we will contribute to the reduction of environmental impact and to the realization of safe and comfortable road traffic.

### Track record in Uganda



Explaining how to install equipment to local companies (2018@Kampala City)



Instructing local companies' workers on installation of the equipment (2018@Kampala City)



Training for end users (2019@Kampala City)

*1 Moderato: Traffic control system in which the duration of the green light is controlled automatically based on calculations of traffic volume at the intersection
*2 KCCA: KAMPALA CAPITAL CITY AUTHORITY
*3 KIIDP2: The Second Kampala Institutional and Infrastructure Development Project

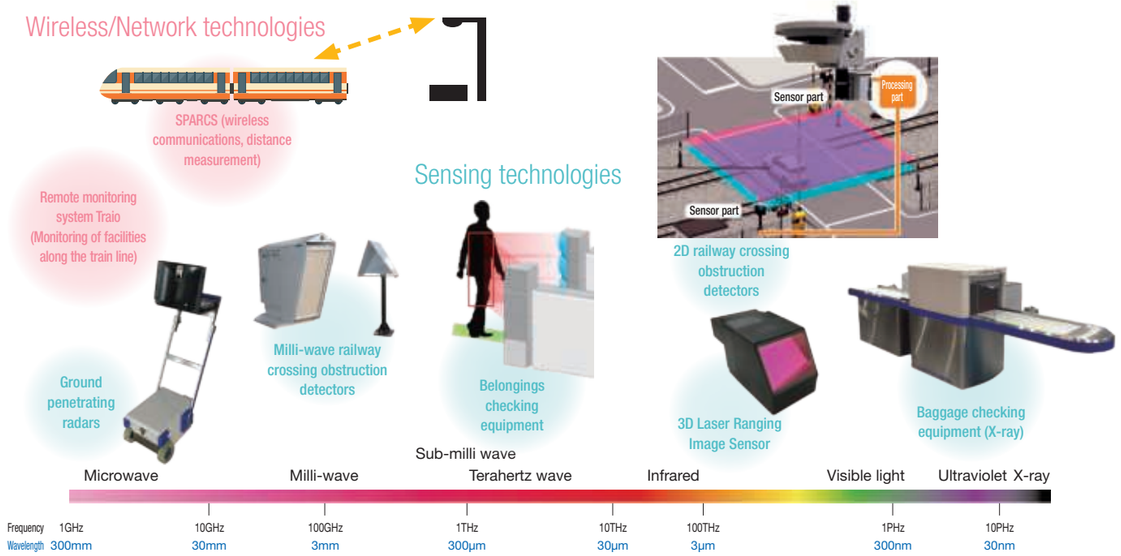
# Research and Development

**We will focus on labor savings for transportation infrastructure through digital transformation (DX), as well as on themes that lead to energy conservation and $CO_2$ reduction to create a decarbonized, recycling-oriented society, and accelerate the development of new solutions and products.**

| Basic Policy | Sensing, wireless, and network technologies that interweave electromagnetic waves, and image analysis using AI, have been positioned as shared foundational technologies for the Company. We will use them to create various new products for achieving ongoing business growth and contributing to the resolution of social issues. |
|---|---|

## ❶ Sensing, Wireless, and Network Technologies

We are developing a range of new products based on the shared foundation of sensing, wireless, and network technologies that interweave electromagnetic waves.




## ❷ AI/Image Analysis Technologies

We are engaged in developing products including Station Platform Safety Monitoring Support Systems that utilize image analysis of video from cameras, automatic baggage checking equipment that use X-ray images to automatically determine hazardous items inside luggage, and crew support systems that detect signs from obstruction warning signal devices of level crossing obstructions based on image analysis of images from cameras positioned at the front of the train.

### [Image Analysis Platform Monitoring Systems]

These systems support accident prevention and initial responses to accidents by detecting hazardous situations, such as passengers walking on the edge of the platform or falling from the platform, from camera images and notifying the tablet terminals installed in the station office of the detected images and information.


Camera for image analysis


Example of hazard detection

*The development of this system is partially supported by subsidies for railway technology development given by the Railway Bureau of the Ministry of Land, Infrastructure, Transport and Tourism of Japan.

### [High Security Devices]

Against the backdrop of the growing threat of terrorism, we are developing high-security equipment that will not impede user convenience, based on the concepts of "high throughput," "space-saving," and "safe and secure."
Automatic baggage detection devices will automatically determine hazardous items in baggage by analyzing X-ray images. Belongings checking equipment (body scanner: under development) will automatically detect hazardous items (explosives, flammable liquids, etc.) concealed beneath clothing, without stopping the flow of people.



Belongings checking equipment

### [Crew Support Systems]

In collaboration with the West Japan Railway Company, we have developed the Obstruction Warning Signal Device Detection Support System, which uses analysis of camera images to detect red lights flashing on an obstruction warning signal device, sounding an alarm to the driver. We began testing the system in West Japan Railway Company's Okayama area in FY2019, and, having obtained favorable results from those tests, we will begin introducing it on West Japan Railway Company lines in FY2023.




Previous systems

If the obstruction warning signal device lit up due to an obstruction on a level crossing, etc., the driver would confirm the obstruction by sight and operate the brakes.

JR西日本 NIPPON SIGNAL
This system is a jointly developed product.

**After introduction of the system**

From images taken by the camera

① **Light emitted from the warning device is detected automatically**
② **Driver is prompted to exercise caution by vocal warning**

Perceptibility of obstruction signal lights has been improved, preventing serious incidents, such as accidents caused by obstructions on level crossings.

## ❸ Achieving Inspections along the Railway with Image Processing: Traio Onboard Units

Nippon Signal is making efforts to expand sales of Traio*1, a system that monitors the condition of wayside facilities*2 and achieves efficient and high-quality maintenance with less manpower and at lower cost.
We have developed new AI that is able to make pass-fail decisions on facilities using image data captured by cameras that can collect images even at night. This AI supports the task of deciding on facility abnormalities, achieving labor savings in maintenance operations.
West Japan Railway Company has equipped its train cars for total inspection with these units.

*1 Traio is a word coined by combining "train" and "IoT." Nippon Signal developed part of the Traio system jointly with West Japan Railway Company.
*2 Wayside Facilities include suspension insulators, concrete poles, pull-off devices, hinged cantilevers, high-voltage cables, and watch towers.

### [Onboard Systems for Total Inspection Vehicle]

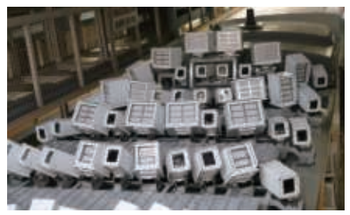

Total Inspection Vehicle

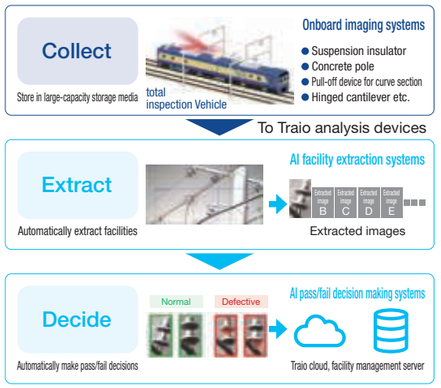

Monitoring Terminal

Photos of actual onboard equipment


Camera


Lighting





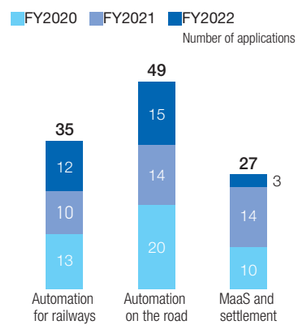

## ❹ Intellectual Property Initiatives

### [Acquisition of Intellectual Property]

Nippon Signal promotes the acquisition of intellectual property linked with its business strategy to co-create value with customers in the new normal era, with the aim of creating new businesses. Specifically, we are expanding our intellectual property, including patents, with a focus on such areas as automation for railways, automation on the road, and mobility as a service (MaaS) and settlement. We are also pressing ahead with the acquisition of intellectual property concerning the shared foundational technologies for our business (sensing, wireless, and network technologies and AI/image analysis technologies).

### [Rewards for Employee Inventions]

Nippon Signal has established a system to reward inventions made by employees, in accordance with the provisions on employee inventions in the Patent Act. To increase the incentive toward employee inventions, bonuses are paid at the time of invention, at the time of patent registration, and when the invention contributes to profit.



# NIPPON SIGNAL's SDGs Actions

**The Group will balance social and corporate values through five types of zukuri (a Japanese word for creation) or business activities to achieve the United Nation's 17 Sustainable Development Goals (SDGs) to Transform Our World and the Group Philosophy.**




## Basic Policy on CSR

SDGs Group Philosophy

We hope to realize a more secure and comfortable society for people around the world, and "Our Mission" in the Group Philosophy sets out the idea.

Details: ➡ P52

## Environmental Policy

SDGs Group Philosophy

We provide eco-friendly products and services, and also reduce the environmental impact throughout the product life cycle, from product development to final disposal, to achieve a synergy between business activities and environmental protection efforts.

Details: ➡ P41

## Health Management

SDGs Group Philosophy

Under the Health Declaration made on April 1, 2022, Nippon Signal has launched initiatives on health management designed to fulfill our social responsibility based on our corporate philosophy of "safety and reliability," and to continue to advance as a company with sustainable growth.

Details: ➡ P48

## Basic Policy on Information Security

SDGs Group Philosophy

The Group is engaged in group-wide information security initiatives under this Basic Policy, with the aims of protecting the information assets of the Group from accidents, disasters, criminal acts, and other threats, and of responding to the trust of our customers and society.

Details: ➡ https://www.signal.co.jp/environment/information_security/

## Basic Policy on Internal Control System

SDGs Group Philosophy

Regarding the establishment of systems to ensure that the execution of duties by Directors complies with laws and regulations and with the Articles of Incorporation and other systems necessary to ensure the appropriateness of business operations, at a meeting of the Board of Directors on June 23, 2023, we amended the Basic Policy on Internal Control System in light of our transition to a Company with an Audit and Supervisory Committee.

Details: ➡ P57

## Policy for Determining Remuneration, etc. for Individual Directors

SDGs Group Philosophy

The remuneration of Directors (excluding Directors who are Audit and Supervisory Committee Members) is decided under a remuneration scheme to provide Directors with healthy incentive to pursue medium-to-long-term improvements in corporate value while also accomplishing short-term performance targets. Remuneration for each Director is set at an appropriate level, based on their responsibilities.

Details: ➡ P56

## Basic Approach on Eliminating Anti-social Forces and Status of Establishment of Such Approach

SDGs Group Philosophy

From the perspective of practicing social justice, the Group will have no relationship with anti-social forces whatsoever in either direct or indirect ways. In the event that the Group is subjected to unreasonable demands from anti-social forces, we will categorically reject such unreasonable demands, in coordination with relevant administrative organizations such as the police and legal experts such as attorneys as necessary.

## NIPPON SIGNAL's SDGs Actions

### 1. Social contributions and disaster relief through products and services

SDGs Group Philosophy

In Japan, the issue of labor shortages due to a low birthrate and aging population is one that threatens the basis of not only the railways but many industries as well. To prepare for the age of low birthrate and aging population, Nippon Signal has been collaborating with West Japan Railway Company and Man-Machine Synergy Effectors, Inc. to pursue the development of a multiple handling vehicle with the aim of reducing heavy labor and improving efficiency in railway maintenance work.



### 2. Reduction of environmental impacts to realize a decarbonized, recycling-oriented society

SDGs Group Philosophy

SPARCS (wireless train control system) can reduce $CO_2$ emissions by approximately 70%* per annum compared with conventional train control systems. The adoption of SPARCS began with the realization of a completely wireless train control system for Beijing Subway Line 15 in 2011, followed by expansion into other countries including India, Indonesia, South Korea, and Egypt. We are also working hard to win bulk orders in Japan for systems with automatic operation functions.



*Prerequisite
**Line types:** Conventional railway line, steel wheels, double track
**Stations:** 4 (1 machine room)
**Intervals between transceivers:** 300 m (number of track circuits: 50 tracks)
**Track length:** 7.5 km
**Number of carriages:** 6 (total number of carriages)

### 3. Transportation infrastructure development and disaster relief support

SDGs Group Philosophy

Nippon Signal is pursuing solutions that support transportation infrastructure that people can use with peace of mind and in comfort, even in a future where the aging population with a low birth rate and labor shortages have progressed. We have collaborated with West Japan Railway Company to develop part of our "Traio" platform that uses IoT technology to provide remote monitoring, automation of inspections, and CBM. With this system, we realize next-generation operation and maintenance (O&M) that enables work to be done without having to travel to the site. In addition, regarding disaster relief support, we contribute to the commercialization of BRT using sections on the JR Kesennuma Line and the JR Ofunato Line, which had been hit hard by the Great East Japan Earthquake.



### 4. Construction of platforms in which diverse employees are able to feel empowered in their work

SDGs Group Philosophy

We provide human rights training on a regular basis with the aim of creating an organization that does not violate human rights in our increasingly globalized corporate activities and supply chains. We are also working to enhance our staff dormitories as part of the creation of an environment in which our employees can work energetically. Signalio Nanasato and Signalio Utsunomiya are our studio dormitories for unmarried employees that accommodate diverse individuals, where younger employees of diverse gender and nationalities live. A corporate childcare facility, Signalio Kids, is attached to Signalio Utsunomiya to create an environment that will allow employees to surmount changes in their life stages and continue to work with peace of mind.



### 5. Support for high-quality education, cultural activities, and women in the workplace

SDGs Group Philosophy

Nippon Signal is a co-sponsor of the Pacific Music Festival (PMF), an international educational music festival for fostering young musicians founded by Leonard Bernstein, a distinguished conductor and composer of the 20th century.
We also co-sponsor Bolero: Plaza of Children's Dream, a project organized by world-renowned pianist, Michie Koyama, to support recovery efforts from the Great East Japan Earthquake. Nippon Signal supports the "from Saitama to the World" scholarships system (organizer: Saitama Center for Go Global Students) and has implemented the NIPPON SIGNAL Global Challenge Scholarships for aspiring young people challenging themselves overseas.



### 6. Environmental preservation

SDGs Group Philosophy

Ever-increasing emissions of greenhouse gases (e.g., carbon dioxide, methane, chlorofluorocarbon) since the industrial revolution are having serious impacts on the global environment, such as extreme weather events and global warming. Nippon Signal is also expected to conduct its business activities in an environmentally-friendly manner.
Nippon Signal is pushing forward activities that contribute to conservation of the global environment, such as the use of renewable energy and forestry conservation, and is conducting private power generation with solar panels installed in its dormitories for unmarried employees, Signalio Nanasato and Signalio Utsunomiya. In addition, we have continually engaged in forestry activities with the Forest of Nippon Signal opened in Yaita City, Tochigi Prefecture.



### 7. Active global partnership

SDGs Group Philosophy

Achieving SDGs requires global partnerships with countries, corporations, citizens, and academic institutions across the globe. Nippon Signal operates projects in 30 countries and regions, and we contribute to the creation of infrastructure in countries across the globe, mainly in Asia, by providing train control systems, AFC (Automated Fare Collection system), platform screen doors, and other products. We also actively network with people in emerging countries, such as those in Asia and Africa, and facilitate the creation of business partners and talent development, in an effort to support the development of these countries.



### 8. Promotion of social welfare

SDGs Group Philosophy

Nippon Signal Group recognizes that, as a corporate group involved in transport infrastructure of a highly public nature, we should be a group that can help save lives in the event of an unexpected accident or a disaster. We are continuing our scheme to encourage officers and employees of Group companies in Japan to obtain lifesaving skill certifications issued by local fire authorities.
Nippon Signal continues to be a co-sponsor of the Gold Concert, a music contest for people with disabilities, presenting the Nippon Signal Award to grand prize winners.
We also collect donations around the date of the anniversary of our founding each year under a matching gift* scheme. We have made donations to many organizations including the Japanese Foundation for Cancer Research, Saitama Rehabilitation Center, and Saitama Adapted Sports Association.



*Matching gift is a system where the Company adds a certain contribution to the amount of donations made by employees and donates the sum.

# E Environment

## Response to TCFD (Task Force on Climate-related Financial Disclosures)

**The Group contributes to a sustainable society through environmentally friendly manufacturing, facilities that emit less greenhouse gases when in use, and popularization and maintenance of railways that are the means of transportation with low environmental load.**
**As part of such initiatives, the Group declared its support of the Task Force on Climate-related Financial Disclosures (TCFD) on December 23, 2021, recognizing that climate change affects sustained growth. We will carry out the following initiatives in accordance with the TCFD recommendations.**

Task Force on Climate-related Financial Disclosures (TCFD) was established by the Financial Stability Board (FSB) to discuss matters on climate-related disclosures. The Task Force recommends firms and other entities to grasp and disclose the risks and opportunities that climate change poses on their business.

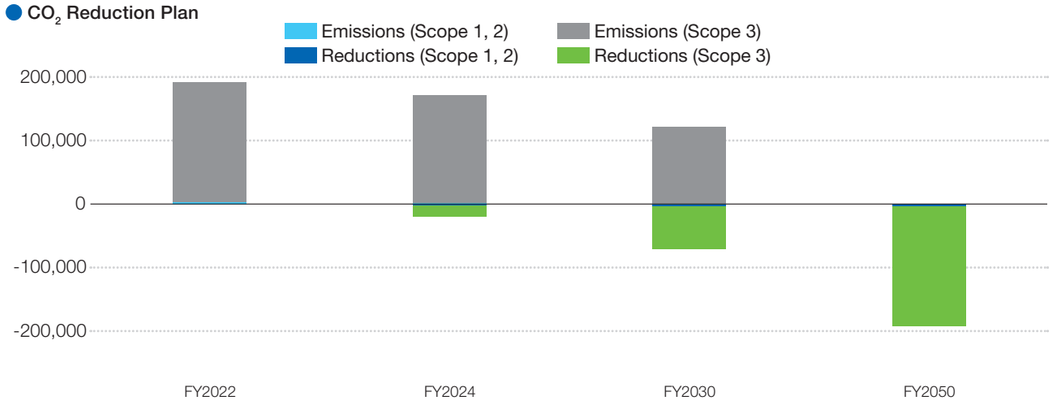
### Participation in TCFD Consortium

We joined the TCFD Consortium to carry out effective TCFD-related activities in June 2022. We will align ourselves with the Consortium and base our activities on cutting-edge knowledge.
The TCFD Consortium is a private sector framework, where a group of businesses and financial institutions that support TCFD facilitate response to the Task Force by discussing effective information disclosure by businesses and initiatives to use disclosed information for appropriate investment decisions by financial institutions and other organizations. As of March 2023, the Consortium has 753 member organizations.

### Greenhouse Gas Emissions Reduction Plan

The Group considers that taking environmental measures against global warming and creating a sustainable society will, as stated in the Group's philosophy, help realize a more secure and comfortable society through superior technologies that provide safety and reliability. Throughout the product life cycle, we aim to reduce greenhouse gas emissions by 46% by 2030 (from the 2013 level) and achieve carbon neutrality by 2050, in line with the government targets.

● $CO_2$ Reduction Plan




**Scope 1:** Direct GHG emissions of the company that occur from fuel combustion or industrial processes
**Scope 2:** Indirect GHG emissions associated with the use of electricity, heat, or steam supplied by electric power companies and other external sources
**Scope 3:** All indirect GHG emissions resulting from business activities that do not fall into Scope 1 or Scope 2. Specifically, CO2 emissions from the supply chain.

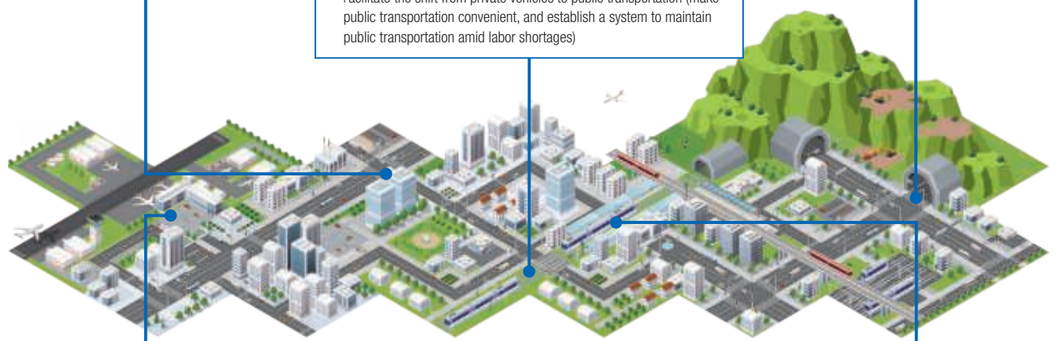
*Scopes 1, 2, and 3 are the classification by the SBT (Science Based Targets: an international initiative to help companies set and achieve GHG emissions reduction targets towards the goal of holding the increase in global temperature to "below 1.5°C/2°C" above pre-industrial levels)

### Initiatives for Environment Beneficial Products, R&D

**Office**
**Save labor, automation**
- Automatic cleaning robots
- Robot control
- Security

**Railway**
**Streamline equipment, save labor on maintenance work**
- Automatic operation
  Reduce $CO_2$ by accelerating and decelerating less frequently
- CBTC (SPARCS, etc.)
  Reduce $CO_2$ by eliminating power consumption of track circuits
- Upgrade the functions of on-site equipment (IoT, disaster prevention)
- CBM, robotization of maintenance
  Extend parts life (reduction of waste) by optimization of maintenance
- Integrate and streamline safety equipment
  Facilitate the shift from private vehicles to public transportation (make public transportation convenient, and establish a system to maintain public transportation amid labor shortages)

**Road traffic safety**
**Automate operation, reduce environmental impact**
- BRT, LRT
- MVNO, PICS
- I2V (vehicle-infrastructure coordination)



**Parking**
**Shift towards full automation and cashless payments**
- Autonomous parking, car allocation
  Reduce $CO_2$ emitted when driving to look for a parking space
- Cloud-based management of vehicle license plate numbers
  Reduce $CO_2$ emissions at the time of manufacturing and disposal by reducing servers and terminal equipment through the introduction of clouds
- Remote monitoring, shift to cashless payments

**NS's social responsibility**
Consider decarbonization in view of the whole product life cycle
- ◆ Procurement (green procurement, fair trade, etc.)
- ◆ Manufacturing (use of green energy)
- ◆ After-sales (recycling)

Achievement of a circular economy

**Station**
**Save labor, shift to cashless payments**
- Payment, recognition
  Reduce paper use
- Shift to thin client computing
  Reduce $CO_2$ emissions at the time of manufacturing and disposal by reducing terminal equipment
- Platform monitoring, CBM

(Abbreviations)
**CBTC:** Communications-Based Train Control, a signal safety technology that controls train operation by using communications between trains and ground facilities.
**CBM:** Condition Based Maintenance, a predictive maintenance approach in which maintenance is carried out only when deemed necessary.
**BRT:** Bus Rapid Transit, a bus system that ensures shorter travel time and punctuality and increases transportation capacity by combining articulated buses, public transportation priority systems, bus only roads, bus lanes, etc.
**LRT:** Light Rail Transit, a track-based transportation system that adopts low-floor vehicles as well as improved tracks and tram stops, resulting in superior features in terms of easiness of getting on and off, punctuality, shorter travel time, and comfort.
**MVNO:** Mobile Virtual Network Operator (service operator that provides lines).
**PICS:** Pedestrian Information and Communication Systems, systems that support safe transit by providing information about names of crossroads, the status of traffic lights for pedestrians, etc., which is made possible through mutual exchange of information between communication devices installed at crossroads and other locations and mobile devices owned by pedestrians.
**I2V:** Infrastructure to Vehicle

# E Environment

## Disclosure in Accordance with TCFD Recommendations

### Governance

The Group regards the addressing of climate change as a significant sustainability challenge. Our Company-wide Environmental Committee, chaired by the Executive Officer responsible for TQM Promoting Department and involving heads of each site, manages the process in accordance with the targets and plans for each fiscal year. The Board of Directors provides supervision based on the reports on matters and progress.
The Company-wide Environmental Committee and its chair are accountable for climate-related matters.



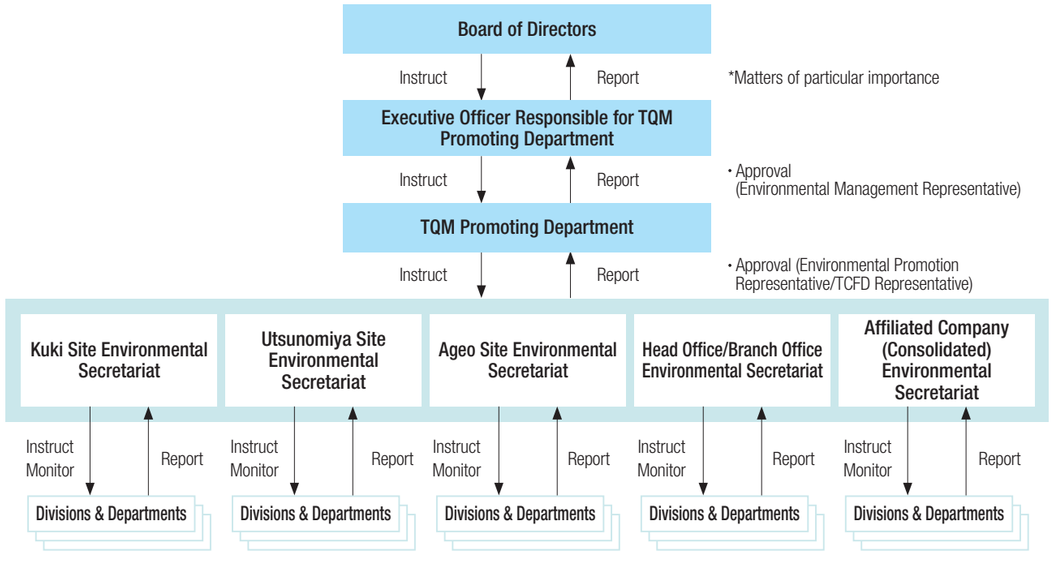

**[Company-wide Environmental Committee/Board of Directors]**

The Company-wide Environmental Committee met four times in total during FY2022. Information disclosed in relation to the TCFD and important matters deliberated by the Company-wide Environmental Committee were reported to the Board of Directors four times in total.
Important matters reported to the Board of Directors were the results of the 6th Stage Environmental Action Plan, changes in countermeasures due to the revision to $CO_2$ emissions, a plan to increase in stages the number of companies participating in the Company-wide Environmental Committee in accordance with the TCFD, changes in the TCFD strategy (formulation of a more detailed strategy), and response to questions from the CDP (a UK-based NGO).

**[Climate-related monitoring]**

The outcomes of climate-related monitoring are sent from divisions and departments to the Environmental Secretariat of sites and affiliated companies and reported from the Environmental Secretariat of sites to the TQM Promoting Department. The TQM Promoting Department reports them to the Executive Officer responsible for TQM Promoting Department, and matters of particular importance are reported at the Board of Directors meetings. Monitoring instructions are given through the route opposite to reporting.

**Monitoring structure**

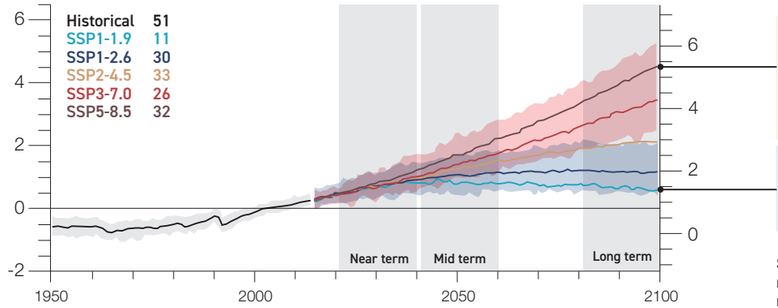



### Strategy (Scenarios Adopted)

In considering scenario analyses, we have consulted AR6 SSP1-1.9 and SSP5-8.5 of the Intergovernmental Panel on Climate Change (IPCC) and set two scenarios, namely, (1) a world in which the average temperature rise in 2100 is below 1.5°C (1.5°C Scenario), and (2) a world in which the average temperature rise in 2100 is 4°C (4°C Scenario).

**Selecting multiple temperature range scenarios to respond to an uncertain future**

**Projection of changes in global average surface air temperature (difference from 1986–2005 average)**




**4°C Scenario**
The temperature will rise to 2.7–5.4 degrees above pre-industrial levels unless measures stricter than now are taken against global warming

**1.5°C Scenario**
The temperature will remain stable at 1.5°C above pre-industrial levels if strict measures are taken

Scenario analysis in the TCFD recommendations suggests the selection of multiple temperature range scenarios

✓ The difference between scenarios widens after 2030
✓ It is important to draw an appropriate transition path for each selected timeline in the scenario analysis, with an eye to achieving carbon neutrality by 2050

### Risk Management

**[Process for managing climate-related risks]**

The Group sorts out, evaluates, and manages climate-related risks listed below, deliberates their validity at the Company-wide Environmental Committee, and reports them to the Board of Directors.

a) Transition risks (policy and regulations, market, technology, users' behavioral changes)
b) Physical risks (natural disasters, infectious diseases, temperature rises)

**[Process for evaluating climate-related risk management]**

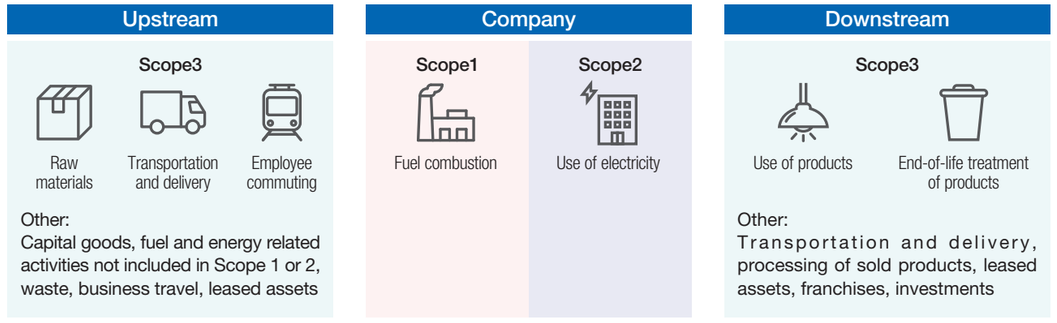
As with other conventional risks, we multiply the probability of occurrence by the scale of damage to judge the severity of near-, mid-, and long-term risks in the 1.5°C and 4°C scenarios respectively. We judge the urgency of response in accordance with the severity.

**[Decision-making process for mitigating, transferring, accepting, or controlling climate-related risks]**

Instructions are given to our Group's sites after decisions are made by the Company-wide Environmental Committee (Board of Directors if the matter is of particular importance).
The sites make specific decisions, led by their Environmental Committee Members. Coordination between sites and reporting on each site's decisions take place at Environmental Secretariat meetings, to which the TQM Promoting Department serves as the secretariat.
Decisions made by each site are made known to divisions and departments by Environmental Committee Members.

### Indicators and Targets (Life Cycle $CO_2$ Emissions)

The Group will work on the reduction of greenhouse gases based on Scopes 1 to 3 set by the SBT Initiative. For Scope 3, we will measure emissions for each category and make efforts to reduce GHG emissions, particularly those related to the use and end-of-life treatment of our products, with activities starting in the early design stages.



# E Environment

## Strategy Based on Scenario Analyses

According to our analysis, the changes in society to keep the temperature rise below 1.5°C will bring about carbon taxation and other legislation, changes in market needs, and other changes, and will push up demand for the Group's decarbonization solutions. If the temperature increases by 3-4°C, there will be a rise in physical risks associated with severe disasters caused by climate change, and it may seriously affect the Group's supply chain including our own offices and plants. Our analysis also suggests that there will be a rise in demand for disaster-resistant products.
In FY2023, we reviewed the scenario analysis published in FY2022. We classified the timing of impacts and our responses thereto into near term, mid term, and long term, and made clear which risks would have large financial impacts. Some items were added in accordance with changes in the environment.
Near term : –FY2023, Mid term : –FY2030, Long term : FY2030–, Underlined : Risks that have large financial impacts, Red : Added items

### 1.5°C Scenario

| Risks | | Implications for Nippon Signal | Responses of Nippon Signal |
|---|---|---|---|
| Transition risks | | | |
| Carbon tax on suppliers, introduction of emissions trading system | Near term | ● Substantial increase in electricity costs | ● The 6th Stage Environmental Action Plan: systematically secure green electricity to achieve a green energy procurement rate of 60% as the Group<br>● Drive energy saving efforts and use of renewable energy (introducing energy-efficient equipment and power generation facilities) towards achieving GHG emissions reduction targets*1 (6th Stage Environmental Action Plan) |
| | Mid term | ● Rise in business costs (carbon tax, emissions trading)<br>● Rise in purchasing prices led by the transfer of costs of materials (iron), etc. to the prices | ● Expand decarbonization policy to Group companies<br>● Shift to products with reduced hardware use<br>● Present Green Procurement Guidelines including those in line with the Framework Convention on Climate Change and keep track of compliance |
| | Long term | ● Sustained high electricity costs | ● Continue to save energy and use renewable energy |
| Rapid change in procurement and investment behaviors aimed at a decarbonized society | Near term | ● Additional costs arising from having to make environment-related capital investments ahead of schedule | ● Make capital investments while saving energy |
| | Mid term/Long term | ● Increased competition in environmental performance (products with greater environmental impact will lose competitive power)<br>● Failure to respond appropriately will lead to the loss of trust in society and business opportunities<br>● Rise in costs for adapting to circular economy | ● Reduce environmental impact of our main products in accordance with SBT Scope 3*2<br>● Develop products and services that will help reduce GHG emissions<br>● Support TCFD and conduct scenario analyses, disclose information in accordance with the framework |

*1 Long-term targets for GHG emissions reduction (SBT Scope 3) will be presented in the 6th Stage Environmental Action Plan
*2 SBT, or Science Based Targets, are the GHG emissions reduction targets required under the Paris Agreement. Scope 3 covers indirect emissions.

### 4°C Scenario

| Risks | | Implications for Nippon Signal | Responses of Nippon Signal |
|---|---|---|---|
| Physical risks | | | |
| Increased severity and sharp rise in the frequency of natural disasters | Near term | ● Wind and flood damage to production bases<br>● Suspension of parts supply due to supply chain disruption<br>● Restriction on outdoor work due to extreme heat, rise in air conditioning costs | ● Business continuity planning: disaster preparedness at production bases, manufacture of same product at multiple production bases, diversifying suppliers, securing means of transportation<br>● Secure in-house power generation and power storage capacity<br>● Improve outdoor work environments (roofs, spot air conditioning, etc.) |
| | Mid term | ● Decline in new capital investments due to customers being hit by disasters<br>● Decrease in new infrastructure developments due to increased costs for disaster preparedness | ● Develop disaster-resistant products (waterproof, etc.)<br>● Propose MaaS and other optimal means of transit that take advantage of existing infrastructure facilities |
| | Long term | ● Decline in operation rates of existing infrastructure due to changes in areas that are susceptible to disasters | ● Propose systems that can be maintained at low costs |
| Regional epidemic of infectious diseases | Near term | ● Decline in operation rates of production plants including parts factories<br>● Reduction of production due to disruption in parts supply | ● Automate production processes, utilize IT for business talks<br>● Secure parts and product inventory |
| | Mid term/Long term | ● Decline in new capital investments due to weaker dominance of public transportation | ● Develop products for use against infectious diseases (temperature check, traceability, etc.) |

### Opportunities

| Opportunities | | Implications for Nippon Signal | Responses of Nippon Signal |
|---|---|---|---|
| Expand sales of products and solutions that support customers' decarbonization efforts | Near term | ● Rise in orders for energy-saving products | ● Adopt energy-saving designs for existing products |
| | Mid term/Long term | ● Rise in orders to replace existing products for the purpose of decarbonization<br>● Increased requests for proposals for decarbonization solutions | ● Decarbonization plan consisting of design improvement and change of products (including discontinuing products)<br>● Offer solutions that will help reduce GHG emissions |
| Expand sales of products and solutions that support the strengthening of customers' infrastructure | Near term | ● Rise in orders for products for securing substitute power source in case of power failure and products to prepare for flooding | ● Generate solar power and develop products with storage batteries<br>● Develop waterproof products for outdoor use |
| | Mid term/Long term | ● Rise in orders to replace existing products following customers' works to strengthen infrastructure<br>● Increased requests for proposals for solutions that enable speedy recovery from disasters | ● Develop products that can stay functional during a disaster<br>● Develop products that contribute to speedy recovery from disasters |
| Expand sales of solutions that will help counter infectious diseases (new normal) | Near term | ● Increase in bookings and payments made through channels other than counters and ticket machines | ● Expand sales of ticket gates that support mobile bookings and payments |
| | Mid term/Long term | ● Increased requests for proposals for solutions that enable capturing of congestion information and equalizing of the flow of people<br>● Increased requests for proposals for solutions that enable full automation of site works | ● Develop and propose solutions to capture the flow of people and forecast congestion<br>● Develop and propose remote monitoring and operation solutions |
| Create and expand new businesses | Mid term/Long term | ● Increased requests for proposals for disaster detection solutions | ● Development plan for technologies to detect disaster occurrence to infrastructure |

### ● Results of Impact Review by Scenario Analysis

**[Products and services]**
- To reduce greenhouse gases throughout the life cycle, we will drive forward the development of products with reduced hardware use. This includes concentrating equipment, removing cables (going wireless), and supporting payments that use general-purpose devices.
- We will drive forward the development of disaster-resistant products in response to increase in disasters due to abnormal weather. Such products include waterproof products and products that come with batteries or power generation equipment to cope with power outages.

**[Supply chain/Value chain]**
- We will diversify suppliers and secure means of transportation to prepare for damage to parts manufacturing plants and disruption to logistics caused by increased disasters due to abnormal weather. This includes design and development using parts that can be procured from multiple suppliers.
- We will drive forward the development of products and systems that help maintain social infrastructure at the time of disasters and contribute to speedy recovery.

**[Investment related to R&D]**
- A 14.0-billion-yen investment in R&D has been planned and being made based on the Group Three-years Medium-term Management Plan (management plan for FY2022–FY2024).
- Specifically, we focus on eco & power solutions that resolve issues in achieving a decarbonized society, as well as CBM, automatic operation, payment and recognition, and robots. All of these contribute to greenhouse gas reduction by allocating limited human and physical resources efficiently.

# E Environment

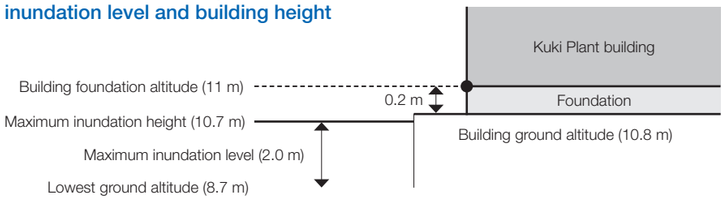
**[Business operation]**

- We mainly engage in businesses that support infrastructure for railways, which are environmentally friendly means of transportation.
- Manufacturing and use of our products cause little direct greenhouse gas emissions. We use green electricity for manufacturing and strive to adopt energy-saving designs.
- Shown below are our main manufacturing sites' hazard maps for flood and inundation.

| | Kuki Plant | Utsunomiya Plant | Ageo Factory |
|---|---|---|---|
| Hazard map |  |  |  |
| Site hazard level | Inundation of 1.0–below 2.0 m<br>Inundation of 2.0–below 3.0 m<br>Classified as inundation risks of 1.0–below 2.0 m inundation for the building area (hazard level 3) and 2.0–below 3.0 m inundation for the regulating reservoir (hazard level 4). | No inundation risks. | Inundation below floor level (0.2–below 0.5 m)<br>Other inundation (0–below 0.2 m) [Flooded roads, etc.]<br>Classified as inundation risks of 0.2–below 0.5 m inundation for the building area. |

*Source: Hazard Map Portal Site

### Kuki Plant: Relationship between the maximum inundation level and building height




The building will not be affected by inundation because the building ground altitude is higher than the maximum inundation height.

### Ageo Factory: Water stops higher than the maximum inundation level are in place

**[Transition risks, physical risks, and climate-related opportunities]**

- Transition risks

Soaring electricity prices have had the largest impact and are likely to have a significant impact in the future as well. If we are unable to sufficiently pass them on to product prices, there is a risk of downward pressure on the profit.
The Group will continue to strive for energy saving, and electricity procurement will be reviewed from time to time in light of social circumstances and other factors.

- Physical risks

Disasters on our manufacturing sites may temporarily cause risks of a significant impact, such as suspension of manufacturing and shipping. Our manufacturing lines, however, can flexibly produce a wide variety of products in small quantities and are therefore expected to recover at a relatively early stage.
To prepare for the case where our suppliers and logistics networks are affected by a disaster, we promote the use of general-purpose products and diversification of suppliers.

- Opportunities

We are expanding sales of waterproof products, products with batteries, products with emergency power switching functions, and other products that respond to physical risks. The demand for such products is expected to grow further. For example, we are expanding sales of waterproof point machines and traffic lights with batteries.
Products that respond to physical risks in a broad sense include cableless systems and remote monitoring systems, the demand for which is also expected to grow further.

**[Capital allocation to (capital investment in) climate-related risks and opportunities]**

Aiming to operate using 100% green electricity, the Group is shifting to green electricity procurement. By May 2023, the following manufacturing sites have completed the shift to green electricity.

### Nippon Signal

| | Start of green electricity procurement | Additional cost (unit price) | Electricity used from the start of procurement to March 2023 (MWh) |
|---|---|---|---|
| Kuki Plant | October 2022 | 0.83 yen/kWh | 1,502 |
| Ageo Factory | October 2022 | 0.83 yen/kWh | 365 |
| Utsunomiya Plant | May 2023 | 0.83 yen/kWh | — |

### Group companies

| | Start of green electricity procurement | Additional cost (unit price) | Electricity used from the start of procurement to March 2023 (MWh) |
|---|---|---|---|
| Nisshin Tokki Co., Ltd. | February 2022 | 0.7 yen/kWh | 204 |
| Asahi Electronics Co., Ltd. | January 2023 | 0.83 yen/kWh | 28 |
| Yamagata Nisshin Electronics Co., Ltd. | April 2023 | 1.1 yen/kWh | — |

Other manufacturing sites will gradually shift to 100% green electricity as well.

If all manufacturing companies of the Group procure 100% green electricity, estimated additional costs will be as follows:

| | Additional cost (estimated unit price) | Electricity use (MWh) (Actual use in FY2022) |
|---|---|---|
| Nippon Signal (3 sites*1) | 1 yen/kWh | 6,168 |
| Group companies that engage in manufacturing*2 | 1 yen/kWh | 2,313 |
| Total | 1 yen/kWh | 8,482 |

*1 Kuki Plant, Utsunomiya Plant, Ageo Factory
*2 Yamagata Nisshin Electronics Co., Ltd., Nisshin Tokki Co., Ltd., Tochigi Nisshin Co., Ltd., Nisshin Industry Co., Ltd., Asahi Electronics Co., Ltd.
*3 Additional cost (unit price) may change depending on social circumstances.
Changes in additional costs due to the introduction of power generation facilities and other factors are not included.

- Capital investments related to energy saving

In FY2022, we made the following capital investments related to energy saving.
◆ Reduced workload at product inspection sites (automation)
◆ Changed 324 fluorescent lights to LED lighting

**[Acquisition/Sale]**

- No large-scale business acquisitions or sales are scheduled, and no significant impact of acquisitions/sales on direct or indirect environmental data is expected.

**[Access to capital]**

- We do not invest in businesses that directly emit greenhouse gases.

## E Environment

### Emissions from main Scope 3 categories and calculation method

We have estimated $CO_2$ emissions from categories that are thought to account for a large portion of total emissions from the Group's corporate activity. The estimates will be reviewed going forward.

(Unit: tons)

| | FY2013 (estimated) | FY2022 | FY2024 (target) | FY2030 (target) | Reduction measures |
|---|---|---|---|---|---|
| **Scope1** | 1,000 | 683 | 600 (-83) | 300 (-383) | Use of electric vehicles and fuel-efficient vehicles |
| **Scope2** | 4,000 | 1,665 | 800 (-865) | 0 (-1,665) | Shift to green electricity |
| **Scope3** | 238,800 | 188,499 | 170,530 (-17,969) | 120,400 (-68,099) | Reduction of $CO_2$ emissions at the time of product use, reduction of raw materials |
| Category 1 | 100,000 | 83,894 | 78,000 (-5,894) | 60,000 (-23,894) | Resource saving<br>Green procurement |
| Category 2 | 3,500 | 3,036 | 2,900 (-136) | 2,500 (-536) | Green procurement |
| Category 4 | 2,000 | 1,715 | 1,600 (-115) | 1,000 (-715) | Improvement of transportation efficiency<br>Introduction of fuel-efficient and eco-friendly cars |
| Category 5 | 500 | 457 | 430 (-27) | 400 (-57) | Recycling |
| Category 7 | 800 | 647 | 600 (-47) | 500 (-147) | Eco-driving, use of public transportation |
| Category 11 | 80,000 | 56,129 | 48,000 (-8,129) | 24,000 (-32,129) | CBTC, power and resource saving |
| Category 12 | 30,000 | 25,621 | 23,000 (-2,621) | 20,000 (-5,621) | Resource saving |
| Other | 22,000 | 17,000 | 16,000 (-1,000) | 12,000 (-5,000) | Improvement of operational efficiency |
| **Total** | 243,800 | 190,847 | 171,930 (-18,917) | 120,700 (-70,147) | Approximately 50% reduction from FY2013 |

### [Calculation methods for Scope 3]

The Group calculates its $CO_2$ emissions using the methods shown below. (○: Calculated, ×: Not calculated)

| Scope 3 | Details | Whether emissions are calculated | Calculation method and grounds |
|---|---|---|---|
| Category 1 | Raw materials | ○ | Calculated by multiplying purchases for each internally set item group by the closest emission coefficient in IDEA*1 v2 |
| Category 2 | Capital goods | ○ | Calculated by multiplying the value of actual capital investment by the emission coefficient that is deemed closest in IDEA v2 (items that can be assessed based only on monetary value are used) |
| Category 3 | Fuel and energy related activities not included in Scope 1 or 2 | × | Expected to be small due to increased use of green energy |
| Category 4 | Upstream transportation and delivery | ○ | Estimated by calculating the emissions from Group companies' transportation based on the fuel consumption method and including emissions from other companies' transportation based on the ratio of transportation costs |
| Category 5 | Waste generated in operations | ○ | Calculated by using the formula in IDEA v2 based on the volume of industrial waste and general waste (calculated by using the data for incineration services) |
| Category 6 | Business travel | × | Emissions from business travel by company owned cars are included in Scope 1, and those from business travel by other means are not calculated |
| Category 7 | Employee commuting | ○ | Calculated only for car commuting based on the commuting distance and using the emission coefficient for gasoline (commuting 24 days per month, fuel efficiency of 20 km/ℓ) |
| Category 8 | Upstream leased assets | × | Emissions from leased vehicle fuel are included in Scope 1, and those from other leased assets are not calculated (estimated to be small) |
| Category 9 | Downstream transportation and delivery | × | Estimated to be small because most are delivered to locations of use and little delivery is done by customers |
| Category 10 | Processing of sold products | × | Estimated to be small because most are delivered as finished products and little processing is done by customers |
| Category 11 | Use of sold products | ○ | Calculated by multiplying lifetime electricity consumption, quantified based on each product group's electricity consumption (when in standby mode and in operation), operation rate, and estimated life expectancy, by the emission coefficient (all products are powered by electricity) |
| Category 12 | End-of-life treatment of sold products | ○ | Calculated by using the formula in IDEA v2 based on the weight of each product group (calculated by using the data for landfill services) |
| Category 13 | Downstream leased assets | × | Not calculated (estimated to be small) |
| Category 14 | Franchises | × | No franchise systems in place |
| Category 15 | Investments | × | No large-scale investments in projects that emit greenhouse gases |

*1 IDEA is a database for calculating greenhouse gas emissions throughout the life cycle, offered by Sustainable Management Promotion Organization.
*2 Greenhouse gas (GHG) emissions are calculated for $CO_2$ only. We will calculate methane (CH4) emissions when clearer data becomes available on leakage at the time of fossil fuel mining and other emissions that indirectly affect us. (Our business does not have any direct links to emissions from livestock, etc.)

### Waste Management

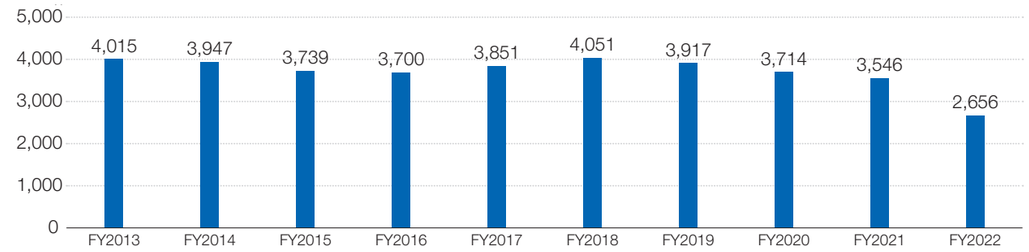
Waste reduction is included in the 6th Stage Environmental Action Plan, and waste volume is managed with targets in place. We strive to reduce the volume of final disposal by reducing and reusing packaging materials and pallets, looking for collection service operators capable of higher-level recycling (material recycling instead of thermal recycling), and taking other measures. The Group will not only continue to strive for waste reduction in business operations but also take action to reduce our products that are disposed of as waste. This also leads to the reduction of life-cycle greenhouse gas (GHG) emissions that fall under SBT's Scope 3, category 12 (end-of-life treatment of sold products).

Initiatives to reduce our products disposed of as waste

| Waste reduction initiative | Expected effect | Our activity |
|---|---|---|
| Extended product life | Reduction due to fewer disposal opportunities | Proposal of appropriate overhaul, and reduction of replacement frequency through CBM |
| Smaller and lighter products | Reduction due to smaller waste volume per disposal | Activities as evaluation indicators for eco-label products |
| Cableless | | CBTC |
| Other | Waste reduction by doing away with mechanical parts, using general-purpose parts (use of existing terminals), and taking other measures | Contactless IC card only automatic passenger gates, card only fare adjustment machines, etc. |

## Trends in Life Cycle $CO_2$ Emissions

### Trends in Scope 1, 2 emissions (t)




### Green Energy Procurement

The Group is gradually shifting to the use of green energy. In addition to using 100% green electricity, we will improve the efficiency of, as well as shift to electricity from, other types of energy and take other measures, thereby reining in greenhouse gas emissions.

| | Timing of green electricity introduction | $CO_2$ emissions reduced in FY2022*1 (t) | Expected $CO_2$ emissions reduction/year (t) |
|---|---|---|---|
| **Nippon Signal Kuki Plant** | October 2022 | 736 | 1,475 |
| **Ageo Factory** | October 2022 | 179 | 370 |
| **Utsunomiya Plant** | May 2023 | 0 | 1,178 |
| **Nisshin Tokki Co., Ltd.** | February 2022 | 88 | 88 |
| **Asahi Electronics Co., Ltd.** | January 2023 | 14 | 55 |
| **Yamagata Nisshin Electronics Co., Ltd.** | April 2023 | 0 | 295 |

*Calculated by multiplying the amount of electricity used after the introduction of green electricity by the emission coefficient for the plan before the introduction

### Introduction of Environmental Management System (Software)

We have introduced Environmental Management System (software) to centrally manage the Group's environmental information and outcomes of environmental activities. After the trial, the software will be introduced on a full-scale basis in July 2023. The Environmental Management System (software) will manage the following matters.

- $CO_2$ Emissions (Scopes 1 to 3)
- Energy use (electricity, gas, petroleum)
- Water use (water intake, wastewater)
- Waste volume

**Inputs**
Information from other internal systems
- Purchase of parts, shipping of products
- Technical information (product electricity consumption, etc.)
- Information on commuting, business travel, etc.
- Logistics information
- Waste management information, etc.

→ **Environmental Management System** (software) →

**Outputs**
- TCFD reports/IR
- Act on Rational Use of Energy
- Environmental Committee materials

## E Environment

# FY2023 Quality, Environment & Safety Policies

### Quality, Environment & Safety Policies

**Basic Policy**

We strive to become a global company by pursuing world-leading technologies with ingenuity and passion to inspire our customers' Kando.

**Policy**

To achieve the basic framework for FY2023, "Next Stage acceleration of real-world implementation," the Group will provide safe and high-quality products and services through process optimization. We will also participate in the TCFD, accelerate decarbonization, and aim to win reliability from people around the world.

### Environmental Management

Our environmental efforts represent the essence of our business activities.

**Environmental Philosophy**

Nippon Signal promotes initiatives to protect and improve the environment in an effort to create a better world for everyone and build a more comfortable society through safe and reliable technology.

**Environmental Policy**

We provide eco-friendly products and services, and also reduce the environmental impact throughout the product life cycle, from product development to final disposal, to achieve a synergy between business activities and environmental protection efforts.

① We consider the impact of our business activities on the environment, promoting efforts to conserve resources and energy, reduce waste, and recycle materials while curbing environmental pollution and improving our sustainable environmental management system.
② We comply with laws, regulations, ordinances, and other agreements related to the environment. We also adhere to our own corporate control standards.
③ We strive to incorporate environmentally conscious technology from the design stage of new product development.
④ We establish specific goals and targets for protecting the environment within achievable technical and financial limits to realize the aims of this environmental policy, and conduct periodic reviews to ensure continued improvement.
⑤ We have created a document version of this environmental policy to ensure all employees are thoroughly aware of the policy for its implementation and maintenance and to share the policy with the public.

In order to promote the fusion of environmental conservation activities and environmental management, the Group has been operating an Environmental Management System based on ISO 14001, through the Company-wide Environmental Committee, comprised of representatives from five production facilities and chaired by the Executive Officer responsible for TQM Promoting Department.

In the fiscal year ended March 31, 2023, three consolidated Group companies that engage in production joined the Company-wide Environmental Committee to accelerate decarbonization. In order to achieve the provision of eco-friendly products and services, we aim to reduce environmental impact from the developmental stage onward, make continual improvements based on the PDCA cycle, and be a sustainable growth company.

**Environmental Audit**

We regularly implement internal and external audits to verify compliance with, and the effectiveness of, the Environmental Management Systems.

Internal audit: Regularly implemented audits based on audit guidelines
External audit: Annual audits by ISO certification institutions; no cases of nonconformance were found in the audit conducted in the fiscal year ended March 31, 2023.

**Environmental Risk Management**

After identifying environmental risks posed by the business operations at specific sites, emergency response training is conducted regularly to help us avoid and mitigate risks.

**Environmental Compliance**

Information on environmental laws and ordinances is managed and shared, and periodic checks are implemented to confirm compliance.
In the fiscal year ended March 31, 2023, there were no legal violations or accidents related to the environment.

### Quality Management

We engage in business activities based on our Group Philosophy: "We help realize a more secure and comfortable society through superior technologies that provide safety and reliability." We determine priority matters and quality targets for each fiscal year, in accordance with our quality policy. We operate a quality management system based on ISO 9001, through our Company-wide QA Committee, chaired by the Executive Officer responsible for TQM Promoting Department. Each division and department engages in quality enhancement by establishing a quality management plan based on the priority matters and making efforts for continual improvement based on the PDCA cycle.

### RQMS Management

RQMS (Railway Quality Management System; ISO/TS22163:2017) is a quality management system standard for the rail industry. It includes the requirements appropriate for the railway market, in addition to the requirements of ISO 9001:2015.
Nippon Signal attained certification in the fiscal year ended March 31, 2020.
We passed the review in the fiscal year ended March 31, 2023 and the certification remains valid.

### Green Procurement Guidelines

Based on its environmental policy of providing eco-friendly products and services, Nippon Signal enacted the Green Procurement Guidelines in 2005. When purchasing commercially available electric and electronic components or items with designated specifications from manufacturers or suppliers, we select and preferentially procure raw materials and components that are friendly toward the environment while also taking into account quality, price, and delivery date. The Green Procurement Guidelines are updated regularly to comply with the latest versions of the Act on the Assessment of Releases of Specified Chemical Substances in the Environment and the Promotion of Management Improvement, the EU's RoHS Directive, the REACH regulation, and other rules.
In addition, we encourage suppliers to acquire certification for Environmental Management Systems, conduct green procurement, and manage and eliminate the use of regulated chemical substances from the perspective of supply chain management.

### Environment & Quality Education and Awareness Raising

Nippon Signal conducts regular training for internal environmental and quality auditors to ensure appropriate environmental activities and improve quality management.

**Environmental and Climate Change Education**

With the understanding that all employees should proactively address environmental issues (especially climate change), we will implement level- and division/department-specific education programs. In the fiscal year ended March 31, 2023, three education program sessions took place.

| | Topic | Purpose | Intended target |
|---|---|---|---|
| July 19, 2022 | From a recycling-oriented society to a circular economy | Learn how designs should be eco-friendly amid calls for the TCFD and other disclosures | Design and manufacturing divisions and departments |
| December 9, 2022 | Environmental management education | Take advantage of the TCFD and other environmental trends, as well as environmental management based on such trends, in conducting business | Sales and administration divisions and departments |
| February 14, 2023 | Green transformation education | Introduce the still unfamiliar concept of green transformation (GX) with specific examples, deepen understanding, and take advantage of the idea in conducting business | Managerial employees, employees who lead the actual work on the frontline |

# E Environment

### Eco Test and QC Exam

We encourage our employees to take the Certification Test for Environment Specialists (Eco Test)*1 and acquire rank 3 or higher certification in the Quality Control Examination (QC Exam)*2 with the aim of raising their awareness of, and helping them acquire knowledge on, the environment and quality. Employees who have passed the Eco Test or acquired rank 3 or higher certification in the QC Exam both exceed 70%.

*1 Eco Test: A test scheme organized by the Tokyo Chamber of Commerce and Industry through which people aim to acquire knowledge on environmental issues
*2 QC Exam: An examination scheme organized by the Japanese Standards Association through which knowledge on quality management is evaluated

## Social Contribution to the Environment

### Global Environment Protection Activities

Each office (head office, branch offices, plants, affiliated companies, etc.) of the Group carries out unique global environment protection activities.




Cleaning a nearby park, planting flowers (Nisshin Tokki Co., Ltd., Kishiwada City)

| Global environment protection activity | Site |
|---|---|
| Voluntary cleaning of areas around sites | Head office, branch offices, Kuki Plant, Utsunomiya Plant, Ageo Factory, etc. |
| Biotope nature protection activities | Ageo Factory |
| Food drive*, where employees collect food items and donate them to children's cafeteria and other organizations | Osaka Branch Office |
| Maintenance of roadside flower beds, participation in flower planting | Kyushu Branch Office, Nisshin Tokki Co., Ltd. |

*Food drive: An activity where the organizer collects unused leftover food items and donates them to food bank organizations, local welfare facilities and organizations, etc.

## Environmental Performance

Since the fiscal year ended March 31, 2006, the Group has continued to formulate environmental action plans, based on which it has pursued reductions in environmental impacts. We have reviewed the 5th Stage Environmental Action Plan (FY2019–FY2021) and are now promoting the 6th Stage Environmental Action Plan.

| Environmental targets | Environmental indicators | FY2022 targets | FY2022 results |
|---|---|---|---|
| 1 Decarbonization | ❶ Energy use reduction rate | 1% or more reduction from the previous fiscal year | 5.3% |
| | ❷ Green energy procurement rate | 20% or higher/year as the Group | 38.5% |
| | ❸ Contribution to the environment by improving business operations | 100% achievement rate | Achieved at six sites |
| 2 Reduction in and Sorting of Industrial Waste Generated | ❶ Reduction in industrial waste generated | 0.5% or more reduction in emission units from the previous fiscal year | 18.7% |
| | ❷ Sorting of industrial waste | 100% achievement rate | Achieved at five sites |
| 3 Social contribution related to the environment | ❶ Promotion of regional environmental activities | Four times or more a year at each site | Achieved at all sites (148 times in total) |
| | ❷ Environmental/SDGs education | Four times a year | Conducted four times |
| 4 Products | ❶ $CO_2$ emissions from (Nippon Signal) products and systems | Discussion on calculation formula | Calculated emissions for major categories in SBT Scope 3 |



## Reduction of the Environmental Impact from Our Products

### Eco-Label Products

We rank products by our level of eco-friendliness. Products that meet our internal criteria have been approved as eco-label products. Multiple eco-label products are approved every year, and the system has produced certain results, such as ripple effects of ideas on other products. While keeping the eco-label system, we have launched new initiatives to achieve a 50% reduction of greenhouse gases (SBT Scopes 1 to 3) throughout the product life cycle by 2030 and carbon neutrality by 2050.
We will calculate life cycle $CO_2$ emissions for each product group and prioritize high-emission products in taking measures. Our activities will take the following directions, in addition to making products smaller and lighter and saving energy, which we have been pursuing in developing eco-label products.

| Details | | Contribution to the reduction of greenhouse gas emissions |
|---|---|---|
| 1 | Hardwareless/General-purpose products | Reduce Categories 1 and 12 emissions, which account for a substantial proportion of SBT Scope 3 emissions, to zero; and achieve a significant reduction of Category 11 emissions |
| 2 | Circular economy | Achieve reduction by converting SBT Scope 3 Category 12 emissions to Category 5 emissions, which we can control, and by replacing former products that have high environmental impacts |
| 3 | Power generation and power storage | Contribute to a decarbonized society although not reducing SBT Scope 3 emissions |

### Energy Creation Business

Fukuoka Nisshin Electronics Co., Ltd., our Group company, engages in the FIT* power generation business to contribute to a decarbonized society through green electricity. Its engages in the "rental roof" power generation business by renting building roofs, installing solar panels on the roofs using its own funds, and generating power.

*FIT: Feed-in Tariff system, where support is provided through guaranteed energy purchase prices set by law

| Installed location | Power generated | |
|---|---|---|
| Dazaifu Schools for Special Needs Education | 97kW |  |
| Okawa Shofu High School, Fukuoka Prefecture | 63kW |  |
| Fukuoka City Transportation Bureau (Kaizuka Station and Meinohama Joint Office) | 128kW |  |

*In addition to the above, systems that generate 1,141 kW in total have been installed at elementary and junior high school buildings, gyms, and other locations in Fukuoka Prefecture and Saga Prefecture.

# S Society

## Human Resource Investments

### Percentage of Female Workers in Managerial Positions, Percentage of Male Workers Taking Childcare Leave, and Differences in Wages between Male and Female Workers

#### ❶ Nippon Signal

| Fiscal year under review | | | | |
|---|---|---|---|---|
| Percentage of female workers in managerial positions (%) (*1) | Percentage of male workers taking childcare leave (%) (*2) | Differences in wages between male and female workers (%)(*3) | | |
| | | All workers | Regular workers | Part-time and fixed-term workers |
| 3.7 | 80 | 71.2 | 75.8 | 73.7 |

*1 The percentage has been calculated based on the provisions of the Act on the Promotion of Women's Active Engagement in Professional Life (Act No. 64 of 2015). Women account for 15.0% of all workers. Secondees to other companies are excluded, while secondees from other companies are included.
*2 The percentage of workers taking childcare leave, etc. or leave for the purpose of childcare under Article 71-4, Item 2 of the Ordinance for Enforcement of the Act on Childcare Leave, Caregiver Leave, and Other Measures for the Welfare of Workers Caring for Children or Other Family Members (Ordinance of the Ministry of Labor No. 25 of 1991) has been calculated based on the provisions of the Act on Childcare Leave, Caregiver Leave, and Other Measures for the Welfare of Workers Caring for Children or Other Family Members (Act No. 76 of 1991). Secondees to other companies are included, while secondees from other companies are excluded.
*3 The percentage has been calculated based on the provisions of the Act on the Promotion of Women's Active Engagement in Professional Life (Act No. 64 of 2015). Equal wages are paid for equal work regardless of gender, and the pay gap derives from differences in male-to-female ratio for the number of workers in each rank. Secondees to other companies are excluded, while secondees from other companies are included.

#### ❷ Consolidated Subsidiaries

| Fiscal year under review | | | | | |
|---|---|---|---|---|---|
| Name | Percentage of female workers in managerial positions (%) (*1) | Percentage of male workers taking childcare leave (%) (*2) | Differences in wages between male and female workers (%)(*3) | | |
| | | | All workers | Regular workers | Part-time and fixed-term workers |
| **Nisshin Electronics Service Co., Ltd.** | 2.8 | 71 | 50.8 | 68.8 | 53.7 |

*1 The percentage has been calculated based on the provisions of the Act on the Promotion of Women's Active Engagement in Professional Life (Act No. 64 of 2015). Women account for 6.9% of all workers. Secondees to other companies are excluded, while secondees from other companies are included.
*2 The percentage of workers taking childcare leave, etc. or leave for the purpose of childcare under Article 71-4, Item 2 of the Ordinance for Enforcement of the Act on Childcare Leave, Caregiver Leave, and Other Measures for the Welfare of Workers Caring for Children or Other Family Members (Ordinance of the Ministry of Labor No. 25 of 1991) has been calculated based on the provisions of the Act on Childcare Leave, Caregiver Leave, and Other Measures for the Welfare of Workers Caring for Children or Other Family Members (Act No. 76 of 1991). Secondees to other companies are included, while secondees from other companies are excluded.
*3 The percentage has been calculated based on the provisions of the Act on the Promotion of Women's Active Engagement in Professional Life (Act No. 64 of 2015). Equal wages are paid for equal work regardless of gender, and the pay gap derives from differences in male-to-female ratio for the number of workers in each rank. Secondees to other companies are excluded, while secondees from other companies are included.





### Basic Policy

The source of the Group's value creation lies in human resources. Our Values in the Group Philosophy include *Hito-zukuri* (education), and we are committed to develop human resources who take on challenges for their own growth.
Our priorities for the fiscal year ended March 31, 2023 were "diverse workstyles for a next-generation HR system reform," "development of personnel for digital transformation (DX) through reskilling and development of young and mid-level employees to nurture next-generation leaders," and "health management that invigorates the organization by promoting employee health and aims to improve corporate value by increasing productivity."

### Initiatives to Adopt Diverse Workstyles for a Next-Generation HR System Reform

#### ❶ Diversity & Inclusion Initiatives

We are taking action to promote women's active engagement by setting KPIs in the general employer action plan for the percentage of women in managerial positions, number of women in engineer positions, and percentage of employees who used the childcare leave system. While engineers, many of whom have engineering backgrounds, account for a substantial proportion of our employees and the percentage of female employees is relatively small, we are working to improve their retention rate and support career advancement by creating an environment that facilitates women's active engagement.
To promote active engagement of non-Japanese human resources, we actively recruit from Japanese universities that drive globalization and overseas universities where a relatively high proportion of graduates join Japanese companies. Aiming to run an organization where diverse human resources play an active role, we offer training programs for managerial employees that focus on diversity management and harassment prevention.
To increase the diversity of our workforce, we recruit without setting quotas for arts and sciences backgrounds, and assign employees with arts backgrounds to engineering divisions and departments. Going forward, we will consider recruiting talented human resources through alumni contacts, introducing a system to rehire former employees, and introducing a training program for Japanese employees to facilitate understanding of different cultures.

#### ❷ Initiatives to Promote Workstyles Unbound by Time or Location

We have introduced flexible working hours, staggered working hours, and remote working to allow employees to flexibly choose when and where to work in accordance with changes in the social environment and their life events. To promote such diverse workstyles and achieve organizational growth at the same time, we consider it important to maintain and improve individual and organizational productivity. To this end, we promote digitalization of business operations, web meetings, and other initiatives and work to establish a new workplace environment. In addition, we constantly monitor and control our systems, provide education and training, and conduct accident drills as cybersecurity measures associated with digitalization.

#### ❸ Childcare Support Initiatives

By promoting flexible workstyles, we support balancing work and childcare and facilitate male employees' participation in childcare. Relevant systems were revised in July 2022 as described below.

- Expanded the scope of employees eligible to apply for restriction on overtime and holiday work and take leave to take care of the sick/injured
- Expanded the scope of employees eligible for flexible working hours for childcare and flexible working hours before childbirth
- Removed core hours for employees who work by flexible working hours before childbirth or due to childcare, nursing care, or doctor's visits

To support employees who try to balance work and childcare, we created "Guidebook to Support Balancing Work and Childcare" with input from parents in the company. The guidebook is distributed to employees who became new parents. The contents include the flow from going through pregnancy to taking childcare leave and returning to work, tips for sharing housework and choosing a day-care center, and recommendations for books on childcare.





### Initiatives for Human Resources Development and Reskilling to Increase Corporate Value

#### ❶ Initiatives to Establish Corporate Culture

Working in line with its philosophy of safety and reliability, the Group seeks to remain a corporate group upon which society relies. To achieve this aim, the Group must build relationships of trust with stakeholders, backed by the proper behavior of each staff member. The Group added Our Code of Conduct to Nippon Signal Group Philosophy to provide a foundation for these relationships of trust. Our Code of Conduct serves as a standard of behavior to be followed by all officers and employees of the Group. The Group encourages all employees to respect laws, ordinances, and other rules. The Group is also working to build an organization with the capacity to quickly discover problems on its own and address them. As part of our initiatives, we regularly hold education programs for all employees,

## S Society

featuring case studies that offer lessons. This equips participants with basic knowledge on safety and reliability necessary as Nippon Signal employees, as well as gives them opportunities to think proactively about the impact of our products on society and bring back the findings to their work.
We set division- and department-specific targets based on company policies and share the targets at division and department meetings held every six months, so that all employees can drive forward management strategies. To achieve the division- and department-specific targets, each employee decides what they should do more of, based on individual targets and competencies expected from each job function. In collaboration with managerial employees, they strive to materialize what they have decided. In addition, we give awards to employees with outstanding achievements and employees who have set examples for others. We also offer overseas training opportunities to high achievers in internal contests.

### ❷ Initiatives to Enhance Digital Literacy of All Employees

We have set "Strengthening of development capabilities and establishment of design and production frameworks adapted to DX" as a priority in our medium-term management plan and have provided DX literacy education to all employees. When recruiting, we put our efforts into securing human resources who have backgrounds mainly in software, as well as AI, images, communications, and other fields that can contribute to DX.

### ❸ Initiatives to Educate Young Employees

To train young employees, we evolved the conventional OJT system into our original "*Tetsuatsu* Program" in 2019.
The *Tetsuatsu* Program was named after the proverb, "Strike while the iron is hot (*Tetsu ha atsui uchini ute*)." It is an education program for new employees, where they gain a variety of experiences by taking advantage of their ability to think flexibly and learn quickly. In organizations that welcome new employees, managers become leaders, and assistant managers and buddies (senior colleagues) play their roles in supporting the growth of new employees. The team thus join forces for the task. Through this program, we aim to involve all the people around new employees in human resources development and let themselves grow by being close to new employees.
Based on the idea described above, we roll out the *Tetsuatsu* Program with the following three objectives.

| 1. | 2. | 3. |
|---|---|---|
| Accelerate the growth curve of new employees by letting them gain a variety of experiences with the guidance and support from their team. | Create a culture where the entire team supports and develops new employees. | Improve the engagement of the team, including new employees. |

In the fiscal year ending March 31, 2024, we look to evolve the program to include not only vertical interactions centered around managers but also horizontal perspectives, thereby increasing development and engagement opportunities across ranks and departments.

### ❹ Leadership Development

In the fiscal year ended March 31, 2023, we held meetings where the President himself communicated the top management's vision to employees mainly in their third to fifth year at the Company. This created an opportunity for young employees to increase motivation toward work, broaden their horizons, and seek to improve their skills. To develop next-generation leaders, we also offered a training program for managerial employee candidates selected from each department. The program covered such themes as broad views and perspectives, clarification of one's vision, and value-adding planning and proposal within the organization or to customers, business partners, and other stakeholders.

### ❺ Reskilling and Relearning Initiatives

To facilitate employees' self-development, we subsidize fees for correspondence courses and provide allowances to employees who have obtained official qualifications recommended by the Company. In April 2023, we expanded the scope of employees eligible for monthly allowances and increased the amount of such allowances, thereby raising pay for employees who actively engage in self-development. Details of specialized education needed for work are planned in each division and department. Managerial employees learn the status of their subordinates' self-development through development interviews and give advice as necessary.
As learning opportunities outside the Company, we have the My Vision Leave System for employees who have reached 55 years of age and worked for the Company for 10 years or longer, allowing them to think about their future and take the opportunity for self-improvement. We also have a system to send our employees to study at International University of Japan.

### Health Management and Organizational Invigoration Initiatives

#### ❶ Promotion of Health Management

In April 2022, we formulated the Nippon Signal Group Health Declaration. We engaged in various activities in the fiscal year ended March 31, 2023, the first year under the Declaration. Specific initiatives included increases in the health checkup consultation and health guidance participation rates, as well as sports events and an exercising campaign in collaboration with the Health Insurance Society to encourage employees to exercise regularly. In March 2023, we were recognized as one of the 2023 Certified Health & Productivity Management Outstanding Organizations (large enterprise category).

2023 健康経営優良法人 Health and productivity

#### Nippon Signal Group Health Declaration

Nippon Signal Group's philosophy is to help realize a more secure and comfortable society through superior technologies that provide safety and reliability. Employees and their families, who support the Group's activities, are irreplaceable assets, and it is most important that they are healthy and empowered. The Company, employees, and the Health Insurance Society will join forces and take active measures to create an environment where each and every employee and their families are physically and mentally healthy at work and live happy lives. Nippon Signal Group will press ahead with the creation of an environment where employees can actively maintain and enhance their health, and keep moving forward as a company that achieves sustainable growth.

Date of formulation: April 1, 2022

**Hidehiko Tsukamoto,**
**President and Chief Executive Officer,**
**Nippon Signal Co., Ltd.**

Described below are our key initiatives.

(1) Physical health
- We will follow up after health checkups, increasing the specific health guidance participation rate and enhancing health guidance offered by healthcare workers.
- To encourage employees to exercise regularly, we will continue to hold sports events and roll out exercising campaigns.

(2) Mental health
We will conduct stress checks, mental health seminars, etc. Measures will be taken for early detection and prevention of mental health issues, including follow-up on employees assessed as highly stressed.

(3) Future health
- We will strengthen measures against smoking.
- We will hold seminars to increase health literacy.
- We will promote the use of our Healthcare Leave system

### ❷ Initiatives to Increase Employee Engagement

Since 2021, we have conducted an employee awareness survey every year to improve employee engagement. The survey results are fed back to the management team and heads of divisions and departments, as well as used to identify issues to be resolved. We thus take advantage of the survey to set the agenda for the creation of a rewarding workplace. The agenda for the fiscal year ended March 31, 2023 was strengthening communication across divisions and departments. We worked to increase employee engagement by supporting voluntary establishment of internal employee networks and taking other measures.

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### Indicators and Targets (Non-Consolidated)

We have set the following KPIs to overcome personnel challenges to materialize our management strategy.

| KPI | FY2021 | FY2022 | Target | Target FY |
|---|---|---|---|---|
| **Percentage of employees taking childcare leave** | Male 56%<br>Female 100% | Male 80%<br>Female 100% | Male 50% or higher<br>Female 90% or higher | FY2025 |
| **Percentage of women in managerial positions** | 3.6% | 3.7% | 5% | FY2025 |
| **Number of women in engineer positions** | 53 | 17% increase from FY2019 (48) | 20% increase from FY2019 (50) | FY2025 |
| **Number of non-Japanese employees hired** | 1 | 1 | 2 | Every year |
| **Training investment per employee** | 65,821 yen | 64,228 yen | 90,000 yen | FY2022 |
| **Percentage of employees engaging in self-development** (obtaining new official qualifications or taking correspondence courses) | 46.6% | 43.5% | 50% | FY2022 |
| **DX literacy education implementation rate** | Not implemented | 93.8% | 100% | FY2022 |



### Major Initiatives

#### ● Nippon Signal Employees Receive the Sainokuni Excellent Craftsman (*Saitama no meiko*) Award and the Sainokuni Young Meister Award

Nippon Signal employees KASAHARA Masaaki and INOUE Yasushi received the Sainokuni Excellent Craftsman (Saitama no meiko) Award and SUZUKI Kohei and NAITO Kinya received the Sainokuni Young Meister Award. They engaged in the production and quality assurance of railway signal safety devices, as well as gave guidance to and developed younger engineers. With the quality as the top priority, they also ensured workplace safety, improved efficiency, shortened manufacturing times, and engaged in product inspections, repairs, renovations, and field tests. Their commitment to the above and other tasks with outstanding skills won recognition.



#### ● A Nippon Signal Employee Receives the Award for Contributors to Standardization Activities

Nippon Signal employee MORISADA Akira received the Award for Contributors to Standardization Activities from the Railway Technology Standardization Investigation Committee (Secretariat: Ministry of Land, Infrastructure, Transport and Tourism; Railway Technical Research Institute). He served as an international expert in many standard deliberations at IEC/TC9* working groups and other meetings over the years. His contribution to the deliberation and formulation of international standards for railway signal systems was recognized. He participated in the Japanese working group for IEC/TC9 as a member for over 20 years and contributed to the international standardization of Japan's railway technology, which also won recognition.

*IEC/TC9: An IEC (International Electrotechnical Commission: an international organization that works on standardization in the field of electric and electronic technology) technical committee that creates railway-related international standards




#### ● Japan Association of Corporate Executives Internship Program

We took part in the Japan Association of Corporate Executives Internship Program for the sixth time in 2022. The two-week program from August 29 to September 9 took place in a hybrid format with online and in-person components for the first time in three years.
The 2022 program offered the participating students an opportunity to learn about the basics of railway technology and constancy (unwavering safety based on fail-safe technologies), from the perspective of manufacturing that supports transportation infrastructure. The participants interacted with our employees and deepened their understanding on our products during the on-site component of the program.






## S Society

### NS Skills Contest

As part of our activities aimed at enhancing our technological capabilities in manufacturing, and nurturing engineers and supervisors who will be role models for others, we hold NS Skills Contests.
We use our own printed circuit boards and other parts for the competition, which also provides a development opportunity for staff in charge of planning and designing the tasks. To enhance manufacturing skills as the Group as a whole, we have held the annual contest since 2013, setting new tasks every year.





### National Skills Competition

By participating in the National Skills Competition, we intend to create an organized and continuing educational base for “NS Meisters,” personnel able to compete on a global stage and take charge of manufacturing for the future.
We participated in the electrical equipment assembly trade category. This category requires acquisition of broad knowledge and techniques in areas including electronic circuit design, circuit board design, program design, repair and measurement, etc. along with advanced soldering skills. We have been participating in the national competition each year since our first participation in 2016. The competition in each category requires not only a wide range of knowledge and skills but also mental strength, as well as the ability to make judgements and decisions. Through the National Skills Competition, we aim to develop human resources who can proactively think, act, and grow.









# CSR (Social Contribution) Activities

**As a company involved in the transportation infrastructure business, which is closely linked to the lives of the public, Nippon Signal Group is highly aware of the importance of coexisting with society and is thus inspired to conduct social contribution activities on a Groupwide basis.**

## Basic Policy on CSR Activities

We hope to realize a more secure and comfortable society for people around the world, and “Our Mission” in Nippon Signal Group Philosophy sets out the idea. Offering valuable products and services to society through superior technologies that provide safety and reliability and solving societal issues will create business opportunities, which will, in turn, increase corporate value.
Taking advantage of the characteristics of our transportation infrastructure business, we will strive to contribute to society consistently while appreciating our ties with stakeholders to help realize safe and comfortable lives for people in Japan and around the world. The maximum amount of expenditure for such activities is approximately 1% of our ordinary income and will be reviewed in accordance with the expansion of the business.

## Major Initiatives

### Matching Gift

We have collected anniversary donations on the date of the anniversary of our founding (February 16) since the fiscal year ended March 31, 1994, under a matching gift* scheme. In the fiscal year ending March 31, 2024, we made a donation to the Turkish Embassy in Tokyo to support reconstruction after the February 2023 Turkey-Syria earthquake. We also make annual donations to the Japanese Foundation for Cancer Research.

*Matching gift is a system where the Company adds a certain contribution to the amount of donations made by employees and donates the sum.



### Co-sponsoring Bolero: Plaza of Children’s Dream and Our First Booth Exhibition

Bolero: Plaza of Children’s Dream is a music event organized by Michie Koyama, a pianist from Sendai. The purpose of the event is to let children who experienced the Great East Japan Earthquake have dreams and hope. In the fiscal year ended March 31, 2023, we not only co-sponsored the event but also exhibited at a booth for the first time to further contribute to hito-zukuri (education) and machi-zukuri (CSR) for the future.



### Tree Growing Event at the Forest of Nippon Signal

In April 2023, we held a tree growing event at the Forest of Nippon Signal (established in Yaita City, Tochigi Prefecture in 2019). Approximately 200 employees, including Group company employees, and their families participated in the event. On the day of the event, participants took walks in nature and experienced forestry as well as craft making with scrap wood, in addition to engaging in tree growing activities. They spent a healthy and fruitful day enjoying nature and communication with other participants while increasing awareness toward global warming.



# G Corporate Governance

## Corporate Governance

**Nippon Signal Group (the Group) has been working to improve the transparency of its decision-making process and construct a corporate governance system that properly incorporates supervisory and check functions.**

### Basic Policy

The Group's basic policy in corporate governance is to conduct management that gives priority to all stakeholders and emphasizes making contributions to society.
To genuinely implement this basic policy, the Group will make ongoing management structural reforms that aim to strengthen corporate governance. The Group will also enhance the management structure so that it can respond flexibly and swiftly to changes in the environment surrounding management.

**Corporate Governance System at a Glance** (As of June 23, 2023)

| | |
|---|---|
| Organizational format | Company with an Audit and Supervisory Committee |
| Number of Directors (including Outside Directors) | 11 (5 Outside Directors) |
| Number of Audit and Supervisory Committee Members (including Outside Directors) | 4 (3 Outside Directors) |
| Term of Directors (excluding Directors who are Audit and Supervisory Committee Members) | 1 year |
| Term of Directors who are Audit and Supervisory Committee Members | 2 years |
| Has Executive Officer System | Yes |
| Advisory body to the Board of Directors | Nomination and Remuneration Advisory Committee |
| Accounting Auditor | Grant Thornton Taiyo LLC |

### Basic Policy on Corporate Governance

Nippon Signal (the Company) has transitioned to a Company with an Audit and Supervisory Committee, of which the majority of members are Outside Directors, to strengthen the monitoring functionality of the Board of Directors. The Company aims to enhance its corporate value by ensuring highly transparent management and further enhanced corporate governance by appointing Directors who are Audit and Supervisory Committee Members with voting rights.
The Company currently has a total of eleven Directors, five, or about half, of whom are Outside Directors that have also been designated as Independent Officers as defined by Tokyo Stock Exchange, Inc. Of the four Audit and Supervisory Committee Members, three, or a majority, are Outside Directors, as required by laws and regulations.

In order to enhance debate regarding the nomination of officers and their remuneration, and raise the objectivity and transparency of the decision-making process, the Nomination and Remuneration Advisory Committee was established as an advisory body to the Board of Directors. This committee is made up of a majority of Outside Directors that are designated as independent directors.
The Company has also established the Advisory Board, which is an advisory body for Representative Directors. This board consists of outside experts with sophisticated and specialized knowledge on business management.

The Company has instituted an Executive Officer System to accelerate and improve the efficiency of managerial decision-making and to enable the flexible execution of business as well as the Group Business Planning Committee to enhance governance in the Group management.

The decisions on significant matters regarding the Company are based on two procedures: a request for decision and a resolution by the Board of Directors.

These procedures are set out in the standards for reference formulated by the Board of Directors. The Board of Directors deliberates on matters requiring a resolution under laws, regulations or the Articles of Incorporation, and important matters related to business operation, including the formulation of short- and medium-term management plans. It also decides on matters stipulated under the Board of Directors regulations and the standards for reference. In addition, the Group Business Planning Committee carries out deliberation and reporting related to the execution of duties under short- and medium-term management plans of the Group companies.
Executive Officers make up the Committee of Directors, a venue for discussions and reports on the execution of duties based on short- and medium-term management plans. Executive Officers are also delegated authority for business execution.

### Competence Required of Directors (Knowledge, Experience, and Capabilities)

The Group aims to remain to be a provider that supports infrastructure evolution with safe and trustworthy solutions. In order to lead sustainable business growth, the Company selects as Directors those who possess strong acumen and experience as a corporate manager, deep insight into technological development surrounding the Company, capabilities to drive the expansion of business domains conducted on a global scale, and expert knowledge that contributes to corporate governance.

**[Directors selected from within the Company]**
The Company selects those who possess strong acumen for overall management, with knowledge of the business environment surrounding the Company and the industries it belongs to, understanding of the Company's strengths and issues through manufacturing, technological research and development, marketing, and sales activities, and experience in management administration such as accounting, legal affairs, and risk management.

**[Outside Directors]**
The Company selects those who can provide advice on management strategies and perform an effective supervisory function on management by drawing on advanced and specialized knowledge and experience in fields other than the Group's business domains, while appropriately ensuring well-rounded diversity. In addition, to fully incorporate views from objective and independent standpoints into corporate management, Outside Directors need to satisfy the requirements for independent directors/auditors as stipulated by Tokyo Stock Exchange, Inc. Furthermore, they account for one-third or more of all Directors and at least one of them need to have corporate management experience at another company.
Given the highly public nature of the Company's business working on transportation infrastructure, a deep understanding of our business is essential in making managerial decisions. We therefore consider that the appropriate proportion of Independent Outside Directors among members of the Board of Directors is around one-third.
The skills matrix of the Company's Board of Directors is as follows.

**Knowledge, Experience, and Capabilities the Company's Directors Possess**

| Name | Status | Corporate management | Finance and accounting | Risk management/ Legal affairs | Global experience | Technology/R&D | Manufacturing | Sales/Marketing |
|---|---|---|---|---|---|---|---|---|
| TSUKAMOTO Hidehiko | Representative Director | ● | | ● | ● | ● | ● | ● |
| FUJIWARA Takeshi | Director | ● | | | ● | | ● | ● |
| KUBO Masahiro | Director | ● | ● | ● | | | ● | ● |
| SAKAI Masayoshi | Director | ● | | | | ● | ● | ● |
| HIRANO Kazuhiro | Director | ● | | | | | | ● |
| INOUE Yuriko | Director (Independent Outside) | | | ● | | | | |
| MURATA Yoshiyuki | Director (Independent Outside) | ● | | ● | ● | ● | | ● |
| TOKUBUCHI Yoshitaka | Audit and Supervisory Committee Member | ● | ● | ● | | | ● | |
| TOKUNAGA Takashi | Audit and Supervisory Committee Member (Independent Outside) | | | ● | ● | | | |
| TAMAGAWA Masayuki | Audit and Supervisory Committee Member (Independent Outside) | | ● | | ● | | | |
| SUZUKI Masako | Audit and Supervisory Committee Member (Independent Outside) | ● | | ● | | | | ● |

Note: The skills matrix above shows the Directors' expertise which the Company particularly expect them to exhibit.

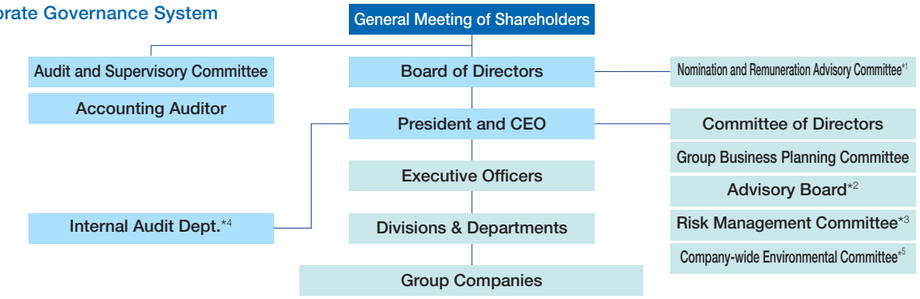
**(Reference) Criteria for Independence of Outside Officers**
The Company prescribes the following criteria for the independence of Outside Officers to objectively determine the independence of Outside Officers. If an Outside Officer falls under any of the following items, the Company determines that the Outside Officer is not sufficiently independent from the Company.
An Outside Officer designated as an Independent Officer as stipulated under Tokyo Stock Exchange, Inc. shall endeavor to maintain independence as prescribed in this Criteria until resignation. If the Outside Officer loses his/her independence, the Outside Officer shall notify the Company in advance (or as soon as possible after the event under unavoidable circumstances).

1. **A person who is, or has been in the past 10 years, a business executor(*1) or Non-executive Director (if the person is an Outside Director) at the Group (i.e. the Company or its subsidiaries).**
2. **Any person (party) who has fallen under any of the following items (1) to (8) in the past three years.**
   (1) A party for whom the Group is a major business partner(*2) or a business executor of such party
   (2) A major business partner of the Group(*3) or a business executor of such partner
   (3) A consultant, accounting professional, or legal professional who has received a significant amount of money(*4) or other property from the Group other than officer remunerations (if a party who receives such property is a corporation, association, or any other entity, a party who belongs to the relevant entity)
   (4) A current major shareholder(*5) of the Group or a business executor of such shareholder
   (5) A business executor of a corporation of which the Group is a current major shareholder(*5)
   (6) A person who belongs to the appointed audit firm for the statutory audit of the Group
   (7) A business executor of an entity whose Outside Officer is also a business executor of the Group
   (8) A person, an officer or other business executor of a corporation, association, or any other entity who receives a large amount of donation or grant(*6) from the Group
3. **If a person who falls under 1. or 2. above is a key person(*7), close relatives (spouse, first or second degree relatives) of such person**
4. **A person who has assumed the office of Outside Officer for more than eight years in total**

(*1) A business executor refers to a person who executes the duties of a Director (excluding an Outside Director), Executive Officer, or employees, etc.
(*2) A party for whom the Group is a major business partner refers to a party who has business transactions with the Group, with total amount of sales in any of the fiscal year within the last three fiscal years exceeding 2% of the consolidated net sales of such business partner.
Such business partner shall include its parent company and important subsidiaries if such business partner is a corporation.
(*3) A major business partner of the Group refers to a party with whom the Group has business transactions, with total amount of sales in any of the fiscal year within the last three fiscal years exceeding 2% of the consolidated net sales of the Group, or a party who has made a loan to the Group in the amount at 2% or more of the consolidated total assets of the Company at the end of the most recent fiscal year. Such business partner shall include its parent company and important subsidiaries if such business partner is a corporation.
(*4) A significant amount of money refers to the yearly average money exceeding 10 million yen over the three most recent fiscal years.
(*5) A major shareholder refers to a shareholder who holds, directly or indirectly, 10% or more of the total voting rights. Such major shareholder shall include its parent company or important subsidiaries if such major shareholder is a corporation.
(*6) A large amount of donation or grant refers to a yearly average amount exceeding 10 million yen over the three most recent fiscal years.
(*7) A key person refers to a Director, Corporate Officer, Executive Officer, business executor who serves as a General Manager or in a higher rank, or business executor who has authority equivalent to that of a General Manager or higher position.

# G Corporate Governance

## Corporate Governance System




*1 Nomination and Remuneration Advisory Committee: Serves as an advisory body to the Board of Directors; consists primarily of Outside Directors, who raise the transparency and objectivity of procedures regarding remuneration for officers or appointment of candidates for officers by participating in the decision process.
*2 Advisory Board: Serves as an advisory body to the Representative Directors; consists of outside experts with sophisticated and specialized knowledge on business management who provide advice and suggestions on business management from an elevated perspective.
*3 Risk Management Committee: Controls compliance risks and all other types of risks under the direction of the Board of Directors; chaired by the President and Chief Executive Officer.
*4 Internal Audit Department: Provides assistance with internal management control activities by auditing the management and operation processes; monitors all managerial activities — such as purchasing, sales, and accounting — to provide information based on the monitoring results as well as advice and suggestions on remediation and efficiency improvement.
*5 Company-wide Environmental Committee: Promotes constant improvement of the company-wide environmental management system; chaired by the Executive Officer responsible for TQM Promoting Department. Issues important for management activities are reported to the Board of Directors.

## Reason for nomination as Outside Director and an outline of expected roles

| Name | Audit and Supervisory Committee Member | Grounds for Election | Concurrent Post(s) (as of June 23, 2023) | Number of Board of Directors Meetings Attended |
|---|---|---|---|---|
| INOUE Yuriko | — | Ms. INOUE Yuriko has high level of professional knowledge and experience as an expert on intellectual property rights.The Company has appointed her to continue as Outside Director in expectation that advice on its management and strategies including corporate law and data governance will be provided and an effective supervisory function on management will be demonstrated. | • Professor, Business Law Department, Graduate School of Law, Hitotsubashi University (Chair of Department)<br>• Outside Director, Dai-ichi Life Holdings, Inc. | 13 out of 13 meetings held 100% |
| MURATA Yoshiyuki | — | Mr. MURATA Yoshiyuki has ample experience, an impressive track record, and knowledge as a business manager. The Company has appointed him to continue as an Outside Director so that these qualities will be applied within its business administration, and an effective supervisory function on management will be demonstrated. | • Representative Director and Executive Vice President, Daiwa House Industry Co., Ltd.<br>• Outside Director, Fujita Corporation | 12 out of 13 meetings held 92% |
| TOKUNAGA Takashi | ● | Mr. TOKUNAGA Takashi possesses professional knowledge and abundant insight on risk management. The Company has decided that he will offer beneficial advice and opinions on the Company's management. The Company has appointed him as an Outside Director who is an Audit and Supervisory Committee Member in expectation that he will offer advice on its management supervisory function by making use of his capabilities in his specialized field. | — | — |
| TAMAGAWA Masayuki | ● | Mr. TAMAGAWA Masayuki, as an expert in advanced and wide-ranging international finance, etc., possesses long years of work experience in the government and at international organizations and extensive knowledge and experience in finance and accounting. The Company has appointed him as an Outside Director who is an Audit and Supervisory Committee Member in expectation that he will offer advice on the Company's management supervisory function by making use of his wealth of experience, achievements, and knowledge on international finance and tax and finance affairs. | • Specially Appointed Professor, Kogakuin University | [Board of Directors meetings] 13 out of 13 meetings held 100%<br>[Board of Corporate Auditors meetings] 13 out of 13 meetings held 100% |
| SUZUKI Masako | ● | Ms. SUZUKI Masako possesses a wealth of experience, achievements, and knowledge in the management of human resources and health support service businesses. The Company has appointed her as an Outside Director who is an Audit and Supervisory Committee Member in expectation that she will offer advice on the Company's management supervisory function based on her professional experience and knowledge in management developed through her career. | • Outside Director, JAPAN POST INSURANCE Co., Ltd.<br>• External Director, Unite and Grow Inc. | — |

## Evaluation of the Board of Directors' Effectiveness

The Company takes steps to periodically verify that the Board of Directors is functioning effectively. Based on the findings of those verifications, an evaluation of the effectiveness of the Board of Directors is performed to identify issues and promote ongoing improvement activities.
In February 2023, a survey was administered to, and responses received from, all Directors and Audit & Supervisory Board Members with regard to measures for enhancing the structure, operating procedures, and meeting discussions of the Board of Directors.
The secretariat of the Board of Directors gathered and processed responses and submitted the results to the Board of Directors for thorough discussion and analysis.
Through this process, it was determined that the Board of Directors was highly effective overall. This decision was prefaced on the assessment that the Board of Directors was sufficiently diverse and balanced, that it engaged in free and open discussion, and that it was appropriately exercising its supervisory function.
All questions in the survey were rated above "mostly appropriate." However, the rating was the lowest on the "content (quality) and quantity of reference materials." The Company will improve the quality of reference materials and provide pre-meeting briefings as needed so as to enable the Board of Directors to have more focused discussions and substantial deliberations. The Company also aims to enhance the effectiveness of the Board's deliberations regarding medium- to long-term management issues by providing more opportunities for dialogue between the Representative Director and Outside Officers.

## Training for Officers

The Company utilizes training by external organizations and holds biannual officer training sessions to help new Executive Officers acquire the necessary skills for exercising high levels of leadership and taking part in management.
In addition, officers are encouraged to actively take advantage of opportunities for further education, including inter-industry exchange forums and other external seminars.

## Officer Remuneration

Director remuneration comprises fixed compensation as well as performance-linked compensation tied to both short-term performance and medium- to long-term performance. This scheme is employed to provide Directors with healthy incentive to pursue medium- to long-term improvements in corporate value while also accomplishing short-term performance targets. Performance-linked compensation is not paid to Outside Directors or Audit and Supervisory Committee Members.
Fixed compensation is decided based on rank with consideration paid to the duties of given Directors, the highest level of employee remuneration, and the remuneration levels of other companies.

### Matters on Performance-Linked Compensation, etc.

Performance-linked compensation is tied to both short-term performance and medium- to long-term performance, in order to provide Directors with healthy incentive to pursue medium- to long-term improvements in corporate value while also accomplishing short-term performance targets. A fixed amount is paid every month.
Compensation linked to medium- to long-term performance is decided each year on an individual basis based on the rate of accomplishment of targets set for each Director. Compensation linked to short-term performance is calculated by dividing the amount equivalent to 2.0%–2.5% of the ordinary income of a given fiscal year among all Directors and Executive Officers. Ordinary income has been selected as the performance indicator because the Group considers profitability as a medium- to long-term challenge and the Medium-Term Management Plan includes an ordinary income target.
With an eye on links to shareholder value (share prices), Directors (excluding Outside Directors who are Audit and Supervisory Committee Members) and Executive Officers spend fixed amounts from their monthly remuneration on treasury share purchase. They thus purchase treasury shares on a constant basis. Specifically, treasury shares are purchased through the officers shareholding association to avoid insider risks. The Group therefore does not have a stock compensation scheme at the moment.

### Policy for Determining Remuneration, etc. for Individual Directors

(a) How the policy on determination of remuneration, etc. for individual Directors was set
To provide healthy incentive to pursue medium- to long-term improvements in corporate value while also accomplishing short-term performance targets, the Company consulted with the Nomination and Remuneration Advisory Committee about the policy for determining remuneration, etc. (hereinafter referred to as the "Policy") and respected the content of the report submitted by the committee. The Policy was adopted at the Board of Directors meeting held on June 23, 2023.
(b) Overview of the Policy
Director remuneration comprises fixed compensation based on rank as well as performance-linked compensation tied to both short-term performance and medium- to long-term performance. This scheme is employed to provide Directors with healthy incentive to pursue medium- to long-term improvements in corporate value while also accomplishing short-term performance targets. Remuneration for each Director is set at an appropriate level, based on their responsibilities. Remuneration for Outside Directors and Directors who are Audit and Supervisory Committee Members comprises fixed compensation only, in light of their responsibilities.
(c) Reason for which the Board of Directors found remuneration, etc. for individual Directors for the fiscal year ended March 31, 2023, in line with the Policy
In making decisions on remuneration, etc. of individual Directors, the Nomination and Remuneration Advisory Committee deliberated on the original proposal from multilateral perspectives, including alignment with the Policy, and the Board of Directors respected the content of the report submitted by the committee when making its decision. The Board of Directors therefore found the decision in line with the Policy.

### Matters on Delegation of Authority to Determine Remuneration, etc. for Individual Directors (excluding Directors who are Audit and Supervisory Committee Members)

In the fiscal year ended March 31, 2023, the Board of Directors decided at a meeting held on June 23, 2023, to delegate the authority to determine the amount of remuneration for individual Directors (excluding Directors who are Audit and Supervisory Committee Members) to President and Chief Executive Officer TSUKAMOTO Hidehiko. He has determined the specifics. The authorities to determine the amount of fixed compensation for each Director (excluding Directors who are Audit and Supervisory Committee Members) and to evaluate the achievement level of managerial goals to be reflected to performance-linked compensation have been delegated. These authorities have been delegated because the Representative Director is the appropriate person to evaluate the achievement level concerning managerial goals while overseeing the performance of the Company as a whole. To ensure appropriate exercise of authority by the Representative Director, the Board of Directors consults with the Nomination and Remuneration Advisory Committee about the original proposal and receives a report from the committee.

# G Corporate Governance

## Group Governance Structure

The Company dispatches Directors and Audit & Supervisory Board Members to Group companies to help elect their Representative Directors, as well as offer guidance and supervision. The Company's corresponding departments receive daily reports on the financial standing and how businesses are being run at individual subsidiaries. The Group Business Planning Committee holds quarterly meetings, where it receives reports on the management, financial results, and risk management systems of the entire Group and offers the necessary guidance.

### Major Initiatives

- Providing positive support, cultivating abilities and offering guidance for formulating strategies and improving management
- Understanding the financial standing and progress in management plans at the Group Business Planning Committee
- Conducting extraordinary audits when necessary

## Internal Control System

In conjunction with its transition to a Company with an Audit and Supervisory Committee, the Company revised its Basic Policy on Internal Control System, at a Board of Directors meeting held in June 2023, to match the new organizational format while carrying on the basic ideas of the original policy. The Company will constantly review the policy in its effort to create a more appropriate and effective internal control system.
The revised Basic Policy is as stated below.

1. System to ensure that the execution of duties by Directors and employees complies with laws and regulations and the Articles of Incorporation

(1) The Board of Directors shall make decisions for the company on matters required by laws, regulations or the Articles of Incorporation, as well as on basic matters concerning execution of duties as stipulated by the Board of Directors regulations, and supervise the execution of duties by Directors and Executive Officers.
(2) By having more than one Outside Director continually, the Company shall strive to maintain and strengthen its supervisory function over the execution of duties by the Directors.
(3) The Company shall have a Committee of Directors, a body that deliberates and reports on the state of execution of business in accordance with short- and medium-term management plans, so as to build a structure that enables appropriate and efficient decision-making.
(4) Each member of the Audit and Supervisory Committee, under the auditing structure in which they cooperate with Accounting Auditors and internal audit divisions/departments, shall offer opinions at Board of Directors meetings as needed and work alongside Outside Directors to keep a check on the Company's decision-making.
(5) The Full-time Audit and Supervisory Committee Members shall regularly hold liaison meetings with chiefs of administrative and operational divisions/departments to conduct audits of the status of specific business operations.
(6) Recognizing that compliance with laws and regulations is the "foundation of trust," the Company shall provide strict ethical training based on the Nippon Signal Group Philosophy to all internal officers and employees.
(7) The Company shall compile a Compliance Manual summarizing the key points to be noted in compliance and distribute it to all employees, as well as regularly offer education/training sessions in order to make knowledge take root among them and to cultivate awareness.

2. System for the storage and management of information concerning the execution of duties by Directors

(1) To ensure appropriate and secure storing of records on the execution of duties by Directors, the Company shall employ a storage system that minimizes the risk of destruction, etc. to the greatest extent possible.
(2) With regard to important documents related to the execution of duties by Directors such as the minutes of Board of Directors meetings, the Company shall manage their use history and limit the persons who handle them so as to ensure higher security, in addition to storing their duplicates at business locations other than the head office in its efforts for the preservation of information.

3. Rules and other systems for management of risks of loss

(1) In order for the Group to minimize damage to its management resources and to maintain continuous growth, and aiming to correctly identify, analyze, assess and appropriately manage risks, the Group shall establish the Risk Management Regulations.
(2) The Group shall have in place a Risk Management Committee, a body that oversees risk management of the entire Group under the direct control of the Board of Directors and chaired by the Representative Director.
(3) The Risk Management Committee shall instruct all Group companies and Company divisions to regularly identify, analyze, and evaluate risks. In addition, the Compliance Subcommittee headed by an Manager shall be formed to address serious risks that are expected to emerge in the medium to long term, thereby contributing to the systematic implementation of countermeasures. The Committee shall also take budgetary measures as needed.

4. System to ensure that the execution of duties by Directors is conducted efficiently

(1) The Group shall have an Executive Officer system, based on the belief that separating management decision-making function and business execution function leads to faster and efficient decision-making in management and enables flexible business execution. Executive Officers shall make up the Committee of Directors, where they report on their own business execution as well as learn about the progress of and check the appropriateness of business execution of other Executive Officers.
Executive Officers with titles shall also attend the meetings of the Board of Directors and present their opinions as needed or give report on matters of importance to business execution.
(2) The Representative Director shall set up an Advisory Board, which is the advisory body to the Representative Director consisting of outside experts with sophisticated and specialized knowledge on business management, and seek its advice on the analysis of business activities and risk management from an objective viewpoint.
(3) Various rules and regulations concerning approval authorities and procedures for requesting decisions shall be established in order to clearly define the roles and responsibilities of each division/department and individual employee. With regard to company-wide themes, however, committees and project teams shall enter into proactive action and divisions/departments shall work together across boundaries to consider the theme in order to address the issues required by the management.
(4) Planning functions of the administrative divisions/departments shall be strengthened so as to facilitate the swift and efficient execution of duties by Directors.

5. System to ensure appropriateness of business operations of the Group comprising the Company and its subsidiaries

(1) The Nippon Signal Group Philosophy shall be set up as a common philosophy of the Group aimed at enhancing corporate value and allowing the Group to contribute to international and local communities.
(2) The Company shall take the initiative to set direction for the Group and check the appropriateness of the entire Group in order to ensure the appropriateness of business as a corporate group and to generate synergy.
(3) Corresponding departments shall receive daily reports on the financial standing and how businesses are being run at individual subsidiaries, while officers are placed at subsidiaries to check that the subsidiaries are properly managed.
(4) The Group Business Planning Committee shall call on the representative directors of subsidiaries to attend its quarterly meetings, where it receives reports on the management, financial results, and risk management systems of the entire Group and offers necessary guidance.
(5) The Company's compliance helpdesks for whistleblowing (compliance hotlines) shall be set up with diversity promotion and diverse styles of working in mind, ensuring that whistleblowers do not suffer disadvantages, and both inside and outside of the company so that users may contact whichever suits them.
(6) An external lawyer who is independent of the Company's management answers the calls to the internal compliance helpdesk for whistleblowing, which is also available to subsidiaries. This way, the Company can detect violation of laws across the Group at early stages and maintain sound workplace environments.

6. Matters regarding employees in cases where Audit and Supervisory Committee requests the assignment of employees to assist them in their duties and matters regarding the independence of such employees from the Directors (excluding Directors who are Audit and Supervisory Committee Members)

Assignment or transfer of employees who assist in the duties of the Audit and Supervisory Committee shall be done with full consideration to its purpose and taking into account the opinion of the Audit and Supervisory Committee.

7. System for Directors and employees to report to the Audit and Supervisory Committee and other systems regarding reports to the Audit and Supervisory Committee

(1) Directors and employees shall help the Audit and Supervisory Committee with their execution of duties, give reports to them on business operations by having them attend the Board of Directors meetings and other important meetings or providing them with materials, as well as exchange opinions with them from time to time.
(2) Directors ensure that persons who report something to the Audit and Supervisory Committee do not suffer disadvantageous treatment for having made such reports.

8. Policy on processing of expenses arising from the execution of duties by the Audit and Supervisory Committee

Processing of expenses arising from the execution of duties by the Audit and Supervisory Committee shall be carried out without delay by the division/department in charge upon confirming the content of expenses claimed by the Audit and Supervisory Committee Members.

9. Other systems to ensure that audits by the Audit and Supervisory Committee are conducted effectively

(1) The Audit and Supervisory Committee Members shall attend and give opinion as needed at statutory meetings and other important meetings including those of the Committee of Directors, the Risk Management Committee, and the Group Business Planning Committee.
(2) The Audit and Supervisory Committee Members shall also attend meetings designed to cultivate awareness for business innovation and corporate value improvement, such as presentations on the quality improvement of business operation by employees, to enhance the effectiveness of audits.

## Dialogue with Shareholders and Investors

The Company avoids holding its General Meeting of Shareholders on dates on which many companies hold their meetings to make it easier for shareholders to take part in the General Meeting of Shareholders and to exercise their voting rights. Notices of convocation are provided electronically well in advance on Tokyo Stock Exchange, Inc.'s website and the Company's website along with disclosure of the English translation of proposals. In addition, the Company facilitates the exercise of voting rights through the creation of an environment that enables the electronic exercise of voting rights through the use of a platform for said purpose, as well as live streaming of the General Meeting of Shareholders.
The Company considers dialogue with shareholders and other investors to be one of the most important tasks for management. Accordingly, the Company has launched an investor relations section on its website to disclose information in a timely and appropriate manner. The Company organizes financial results briefings for institutional investors and posts the materials on its website, and creates other opportunities for constructive dialogue with investors in an effort to enhance its corporate value.

## Cross-Shareholdings

The Company engages in cross-shareholdings when deemed necessary for purposes such as sustaining or enhancing business alliances or sales transactions, or maintaining financial transactions and other collaborative business relationships.
The Company recognizes that it is desirable to keep cross-shareholdings at a minimum from the perspective of maintaining and improving corporate value. Based on this recognition, the Board of Directors determines the rationality of individual holdings on an annual basis by evaluating the holding purpose, the associated gains or losses, transaction volumes, counterparty performance, and future relationships. Those cross-shareholdings that are deemed to lack meaningfulness will be sold.
Voting rights attached to cross-shareholdings will be exercised by voting in favor of proposals judged to contribute to corporate value and against those judged to detract. Discussions with the counterparty will be arranged as necessary to discuss proposals.
The Company currently does not have uniform standards for exercising voting rights due to the need for comprehensive decisions that take into account non-financial information pertaining to each company.
Should a company expresses its intent to sell shares of the Company's stock possessed as a cross-shareholding, the Company will respond appropriately and without implying that transactions will be curtailed or taking other steps to interfere with the sale.

## Anti-Takeover Measures

To maintain and enhance both its corporate value and the common value of shareholders, the Company established measures against the acquisition of large quantities of its shares. These anti-takeover measures were approved by resolution at the Ordinary General Meeting of Shareholders in June 2010 and put into place thereafter. Following the expiration of these anti-takeover measures, resolutions to extend the period of the measures were approved at the Ordinary General Meetings of Shareholders held in June 2013, in June 2016, in June 2019, and in June 2022.

For details about the anti-takeover measures, please see the Company's website (Japanese only).
➡ **https://www.signal.co.jp/ir/shareholder/**

## Risk Management Structure

The greatest risk to the Group is failing to maintain safety and reliability. To ensure that safety and reliability is always maintained, the Company has established several regulations that clearly define the boundaries of authority and responsibility. Group divisions work in line with these regulations as they take actions to control risks.
The Risk Management Committee, which is placed under the direct control of the President and Chief Executive Officer, is responsible for countering actions that would impede sound corporate management and addressing risks and compliance issues that threaten to damage corporate value or those that a division cannot handle on its own.
The Risk Management Committee instructs all Company divisions and Group companies to regularly identify, analyze, and evaluate risks. In addition, the Compliance Subcommittee has been formed to address serious risks that are expected to emerge in the medium to long term, thereby contributing to the systematic implementation of countermeasures.

## Compliance Promotion Structure

Compliance promotion activities are advanced under the guidance of the Risk Management Committee, which is chaired by the President and Chief Executive Officer. In 2010, the Compliance Manual was created, and the Company began holding regular compliance training to spread and entrench compliance awareness.
In addition, the Company has set up compliance hotlines as compliance helpdesks for whistleblowing. In 2015, the Company added an outside lawyer as a contact point.

## Business Continuity Planning

The Group works on transport infrastructure that is indispensable to society. In contributing to society, the Group understands that it has a responsibility to try to swiftly restore operations in the wake of a natural disaster, an act of terror, or any other calamity so that products and services can be provided.
For these reasons, the Group has formulated a Business Continuity Plan (BCP) to cope with disasters and accidents such as large-scale earthquakes. It takes into account many different risks such as securing supply for materials and the procurement of fuel while working to restore operations. The Group will continue reviewing issues and working to improve its BCP.
With the spread of COVID-19, the Group has developed its Regulations on Response to Natural Disasters and Novel Infection and set out provisions regarding employee safety and business continuity, based on the expansion of international businesses and new work styles such as telework.

## Creation of the Earthquake Initial Response Manual

As part of the BCP, the Group has created the Earthquake Initial Response Manual. It specifies initial response actions to be taken in the event of a large-scale earthquake. The Group conducts regular drills at individual locations to help quickly form a local response headquarters and a voluntary fire brigade.

## Establishment of Nippon Signal Group Philosophy and Our Code of Conduct

Principle 2.2 of Japan's Corporate Governance Code, which was formulated by Tokyo Stock Exchange, Inc., requires companies to formulate and put into practice a code of conduct that is to be followed by their staff members in Japan and other countries. The Group's corporate activities are supported by many different stakeholders, including customers, business partners, shareholders and investors, employees, and local communities. Working in line with its philosophy of safety and reliability, the Group seeks to remain a corporate group upon which society relies. To achieve this aim, the Group must build relationships of trust with stakeholders, backed by the proper behavior of each staff member.
The Group added Our Code of Conduct to Nippon Signal Group Philosophy in April 2016 to provide a foundation for these relationships of trust. Our Code of Conduct serves as a standard of behavior to be followed by all officers and employees of the Group.
The Group encourages all employees to respect laws, ordinances, and other rules. The Group is also working to build an organization with the capacity to quickly discover problems on its own and address them.

## G Corporate Governance

# Corporate Executives (as of June 23, 2023)

### Directors



TSUKAMOTO Hidehiko
President and Chief Executive Officer

| | |
|---|---|
| Apr. 1982 | Joined NIPPON SIGNAL CO., LTD |
| May 2005 | General Manager of AFC Systems Sales Dept. of AFC Systems Division |
| Jun. 2006 | Executive Officer |
| Jun. 2010 | Director, Managing Executive Officer |
| Jun. 2014 | Deputy Chief Executive Officer |
| Apr. 2015 | Representative Director, Executive Vice President & Chief Operating Officer |
| Jun. 2016 | President and Chief Executive Officer (to present) |
| Jun. 2020 | Chief Executive Officer |
| Apr. 2021 | President and Chief Executive Officer and Chief Operating Officer (to present) |



FUJIWARA Takeshi
Deputy Chief Executive Officer

| | |
|---|---|
| Apr. 1983 | Joined NIPPON SIGNAL CO., LTD. |
| Jul. 2009 | General Manager of Private Railways Sales Dept. of Railway Signal Systems Division |
| Jun. 2010 | Executive Officer |
| Apr. 2013 | Managing Executive Officer |
| Jun. 2013 | Director (to present) |
| Apr. 2016 | Chief General Manager of Sales and Marketing Head Office |
| Apr. 2019 | Responsible for Domestic Businesses and Branch Offices |
| Apr. 2020 | Deputy Chief Executive Officer (to present), Responsible for Domestic and Overseas Businesses and Branch Offices |
| Jun. 2020 | Responsible for Smart Mobility Systems Promotion Division |
| Apr. 2022 | In charge of Business Management (to present) Responsible for Transport Systems, Smart Mobility Systems Promotion Division, and Branch Offices (to present) |



KUBO Masahiro
Director

| | |
|---|---|
| Apr. 1983 | Joined NIPPON SIGNAL CO., LTD. |
| Jul. 2006 | General Manager of Accounting Dept. |
| Jul. 2009 | General Manager of Tohoku Branch Office |
| Jun. 2014 | General Manager of General Affairs Dept. of Business Administration Division |
| Apr. 2016 | Executive Officer, General Manager of Corporate Strategy Dept. |
| Apr. 2018 | Chief General Manager of Kuki Plant of Mono-zukuri Division |
| Apr. 2019 | Senior Executive Officer, General Manager of Corporate Strategy Dept., Responsible for Finance Dept. |
| Apr. 2020 | Managing Executive Officer (to present), In charge of Business Administration (to present) |
| Jun. 2020 | Director (to present) |



SAKAI Masayoshi
Director

| | |
|---|---|
| Apr. 1985 | Joined NIPPON SIGNAL CO., LTD. |
| Jul. 2006 | General Manager of Safety Technology Research Dept. of Research Center |
| Jul. 2010 | Chief General Manager of Research & Development Center |
| Jun. 2014 | Chief General Manager of Kuki Plant of Mono-zukuri Division |
| Apr. 2016 | Executive Officer, Chief General Manager of Research & Development Center of Technical Development Head Office, Chief General Manager of Visionary Business Center |
| Apr. 2020 | Senior Executive Officer, In charge of Research and Development, Chief General Manager of R&D Section, Chief General Manager of ANSHIN Center, General Manager of Safety Technology Research Dept., General Manager of Advanced Railway System Development Section |
| Apr. 2021 | Managing Executive Officer (to present), Responsible for Kuki Plant (to present), In charge of Technology, Research and Development (to present), Chief General Manager of R&D Section, General Manager of IP Management Dept., General Manager of Advanced Railway System Development Section, Responsible for TQM Promoting Dept. (to present) |
| Jun. 2021 | Director (to present) |
| Apr. 2023 | Responsible for Railway System Business (to present), Responsible for Smart Mobility Systems Division (to present) |



HIRANO Kazuhiro
Director

| | |
|---|---|
| Apr. 1983 | Joined NIPPON SIGNAL CO., LTD. |
| Jul. 2006 | General Manager of Railway Signal Division of Osaka Branch Office |
| Jul. 2009 | General Manager of Transport information Systems of Transport Information Systems Division |
| May 2011 | Chief General Manager of Transport Information Systems Division |
| Jun. 2014 | Executive Officer, Chief General Manager of Railway Signal Division of Business Division |
| Apr. 2019 | Senior Executive Officer, Chief General Manager of Railway Signal Division |
| Apr. 2020 | Chief General Manager of Transport Systems Division |
| Apr. 2021 | Managing Executive Officer (to present), Responsible for Transport Systems, Chief General Manager of Transport Systems Division, Responsible for Smart Mobility Systems Promotion Division |
| Apr. 2022 | Chief General Manager, Osaka Branch Office (to present), Responsible for western Japan area (to present) |
| Jun. 2022 | Director (to present) |



INOUE Yuriko
Outside Director

| | |
|---|---|
| Nov. 1993 | Full-time Lecturer of Graduate Schools for Law and Politics, The University of Tokyo |
| Apr. 2004 | Professor, Graduate School of Law, Kobe University |
| Oct. 2010 | Professor, Graduate School of International Corporate Strategy, Hitotsubashi University |
| Apr. 2018 | Professor, Business Law Department, Graduate School of Law, Hitotsubashi University |
| Jun. 2018 | Outside Director, NIPPON SIGNAL CO., LTD. (to present), Outside Director, Dai-ichi Life Holdings, Inc. (to present) |
| Apr. 2020 | Professor, Business Law Department, Graduate School of Law, Hitotsubashi University (Chair of Department) (to present) |



MURATA Yoshiyuki
Outside Director

| | |
|---|---|
| Apr. 2009 | President and Representative Director, Taisei Housing Corporation |
| Apr. 2011 | Executive Officer, Taisei Corporation |
| Apr. 2013 | Managing Executive Officer, Taisei Corporation |
| Jun. 2013 | Member of the Board, Taisei Corporation |
| Apr. 2015 | President and Chief Executive Officer, Representative Director, Taisei Corporation |
| Jun. 2020 | Vice Chairman, Representative Director, Taisei Corporation |
| Jun. 2021 | Outside Director, NIPPON SIGNAL CO., LTD. (to present), Director and Executive Vice President, Daiwa House Industry Co., Ltd. |
| Apr. 2022 | Outside Director, Fujita Corporation (to present) |
| Jun. 2022 | Representative Director and Executive Vice President, Daiwa House Industry Co., Ltd. (to present) |

### Directors who are Audit and Supervisory Committee Members



TOKUBUCHI Yoshitaka
Director (Full-time Audit and Supervisory Committee Member)

| | |
|---|---|
| Apr. 1982 | Joined NIPPON SIGNAL CO., LTD. |
| Jul. 2006 | General Manager of Production Control Dept. of Kuki Plant |
| Jun. 2008 | Executive Officer, General Manager of Corporate Strategy Dept. |
| May 2011 | Managing Executive Officer |
| Jun. 2011 | Director |
| Jun. 2014 | Deputy Chief Executive Officer |
| Apr. 2018 | Chief General Manager of Business Administration Division |
| Apr. 2019 | Director and Executive Vice President, Executive Vice President and Executive Officer |
| Jun. 2021 | (Full-time) Audit & Supervisory Board Member |
| Jun. 2023 | Director (to present) |



TOKUNAGA Takashi
Outside Director (Full-time Audit and Supervisory Committee Member)

| | |
|---|---|
| Apr. 1986 | Joined National Police Agency |
| Feb. 1998 | First Secretary of Embassy of Japan in the People's Republic of China |
| Apr. 2008 | Professor of Graduate School of Public Policy, The University of Tokyo |
| Sep. 2013 | Chief of Aomori Prefectural Police Headquarters |
| Aug. 2016 | Deputy Director General of Commissioner General's Secretariat, National Police Agency |
| Apr. 2019 | Councilor, Cabinet Secretariat |
| Jan. 2020 | Secretary General of Japan Casino Regulatory Commission |
| Jun. 2023 | Outside Director, NIPPON SIGNAL CO., LTD. (to present) |



TAMAGAWA Masayuki
Outside Director (Audit and Supervisory Committee Member)

| | |
|---|---|
| Apr. 1981 | Joined Ministry of Finance |
| Jun. 2000 | Deputy Director of Monetary and Financial Systems Bureau, The International Monetary Fund (IMF) |
| Jul. 2007 | Regional Commissioner of Sapporo Regional Taxation Bureau |
| Jul. 2008 | Director of Budget Development Management System, Asian Development Bank |
| Jul. 2011 | Deputy Head of Finance, Japan Tobacco Inc. |
| Jul. 2012 | Head of Asia External Representation Office, African Development Bank (AfDB) |
| Oct. 2016 | Specially Appointed Professor of Kogakuin University (to present) |
| May 2017 | Managing Executive Director, Kogakuin University |
| Jun. 2019 | Outside Audit & Supervisory Board Member, NIPPON SIGNAL CO., LTD. |
| Jun. 2023 | Outside Director (to present) |



SUZUKI Masako
Outside Director (Audit and Supervisory Committee Member)

| | |
|---|---|
| Apr. 1972 | Joined Nippon Yusen Kabushiki Kaisha |
| Jul. 1983 | Joined Temporary Center Inc. |
| Apr. 1999 | Executive Officer of Pasona Inc. |
| Sep. 2004 | Director, Senior Managing Executive Officer of Pasona Inc. |
| Dec. 2007 | Director, Senior Managing Executive Officer of Pasona Group Inc. |
| Jun. 2010 | Director, Vice President of Benefit One Inc. |
| Jan. 2016 | President of Benefit one Health care Inc. |
| Jun. 2016 | Outside Director of JAPAN POST INSURANCE Co., Ltd. (to present) |
| Jul. 2019 | Executive Advisor of Pasona Group Inc. |
| Dec. 2019 | President and Representative Director of Pasona Force Inc. |
| Mar. 2023 | External Director of Unite and Grow Inc.(to present) |
| Jun. 2023 | Outside Director, NIPPON SIGNAL CO., LTD. (to present) |

### Executive Officers and Deputy Executive Officers

| | |
|---|---|
| Chief Operating Officer | TSUKAMOTO Hidehiko |
| Deputy Chief Executive Officer | FUJIWARA Takeshi |
| Managing Executive Officers | KUBO Masahiro<br>SAKAI Masayoshi<br>HIRANO Kazuhiro<br>GOTO Ryuichi |
| Executive Officers | RYUGO Kazuhiro<br>MIKUNI Hiroyuki<br>HORIE Toru<br>NAMIKI Yutaka<br>TAGAMI Hideaki<br>MACHIYAMA Shinichi<br>HIRAMOTO Masayuki<br>NAKAZAWA Mutsuo |
| Deputy Executive Officers | MINAMI Junichi<br>FUJIMOTO Hiromasa<br>AOKI Yoshinori |

# Financial and Non-Financial Highlights (Years ended March)

| Financial Data (¥ million)*2 | 2014 | 2015 | 2016 | 2017 | 2018*1 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|
| Orders received*3 | 105,783 | 99,713 | 83,258 | 88,659 | 99,581 | 113,347 | 118,604 | 85,185 | 79,709 | 99,063 |
| Net sales*4 | 93,217 | 100,416 | 90,593 | 82,134 | 83,770 | 99,857 | 111,675 | 92,755 | 85,047 | 85,456 |
| Operating income | 5,943 | 8,377 | 7,162 | 4,269 | 2,061 | 7,000 | 8,912 | 5,713 | 5,390 | 5,112 |
| Income before income taxes and minority interests | 7,039 | 9,111 | 8,038 | 5,315 | 3,192 | 7,916 | 9,662 | 7,282 | 6,531 | 6,027 |
| Net income attributable to owners of parent | 3,667 | 5,413 | 4,994 | 3,500 | 2,051 | 5,306 | 6,584 | 4,916 | 4,503 | 4,075 |
| R&D expenses | 3,167 | 3,291 | 3,419 | 3,078 | 2,587 | 2,401 | 2,887 | 2,753 | 2,628 | 2,838 |
| Capital investment | 1,700 | 1,953 | 3,502 | 3,035 | 3,564 | 1,903 | 2,459 | 2,912 | 2,516 | 2,669 |
| Depreciation and amortization | 1,555 | 1,701 | 1,685 | 1,787 | 1,968 | 2,128 | 2,066 | 2,052 | 2,170 | 2,380 |
| Total assets | 113,140 | 120,573 | 121,434 | 124,298 | 127,322 | 137,643 | 137,971 | 141,356 | 134,086 | 146,019 |
| Net assets | 66,886 | 74,764 | 79,801 | 79,252 | 79,401 | 82,135 | 79,648 | 84,694 | 86,740 | 89,351 |
| Cash flows from operating activities | 10,656 | 14,917 | 4,152 | 369 | (305) | 3,291 | 9,160 | 1,145 | 2,099 | 1,715 |
| Cash flows from investing activities | (1,745) | (2,774) | (5,963) | (1,013) | (4,153) | (2,437) | (4,600) | (1,911) | (2,344) | (3,597) |
| Free cash flow | 8,911 | 12,142 | (1,811) | (644) | (4,458) | 854 | 4,560 | (766) | (244) | (1,881) |
| Cash flows from financing activities | (7,237) | (6,502) | (1,412) | (492) | 3,111 | 426 | (4,367) | 1,354 | (6,750) | 3,911 |
| (Yen) | | | | | | | | | | |
| Earnings per share (EPS) | 58.32 | 79.37 | 73.24 | 51.59 | 31.42 | 81.29 | 103.34 | 78.82 | 72.21 | 65.34 |
| Book value per share (BPS) | 975.92 | 1,091.55 | 1,167.75 | 1,195.14 | 1,216.17 | 1,258.04 | 1,276.99 | 1,357.90 | 1,390.71 | 1,432.57 |
| Dividend per share | 16*5 | 20 | 22 | 23 | 24 | 25*6 | 26 | 27 | 27 | 27 |
| (%) | | | | | | | | | | |
| Return on equity (ROE) | 5.9 | 7.7 | 6.5 | 4.4 | 2.6 | 6.6 | 8.1 | 6.0 | 5.3 | 4.6 |
| Return on assets (ROA) | 6.0 | 7.8 | 6.6 | 4.3 | 2.3 | 6.0 | 7.0 | 4.6 | 4.7 | 4.2 |
| Equity ratio | 58.8 | 61.8 | 65.6 | 63.8 | 62.4 | 59.7 | 57.7 | 59.9 | 64.7 | 61.2 |
| Payout ratio | 27.4 | 25.2 | 30 | 44.6 | 76.4 | 30.8 | 25.2 | 34.3 | 37.4 | 41.3 |

## Non-Financial Data*2

### Personnel Data

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Number of Employees*7 | 1,207 | 1,207 | 1,232 | 1,254 | 1,278 | 1,255 | 1,232 | 1,265 | 1,261 | 1,230 |
| Average age of employees | 41 yrs & 8 mos | 41 yrs & 6 mos | 41 yrs & 10 mos | 41 yrs & 6 mos | 41 yrs & 10 mos | 42 yrs & 6 mos | 42 yrs & 10 mos | 42 yrs & 9 mos | 42 yrs & 11 mos | 42 yrs & 11 mos |
| Average length of service of employees | 17 yrs & 11 mos | 17 yrs & 9 mos | 17 yrs & 11 mos | 17 yrs & 2 mos | 17 yrs & 1 mos | 17 yrs & 4 mos | 18 yrs & 3 mos | 18 yrs & 2 mos | 18 yrs & 3 mos | 18 yrs & 10 mos |

### Environmental Data*8

| Inputs | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Electricity (1,000 kWh) | 8,413 | 8,282 | 7,867 | 7,613 | 7,850 | 8,456 | 7,986 | 7,645 | 7,361 | 7,021 |
| Gas ($km^3$) | 319 | 311 | 285 | 310 | 332 | 347 | 349 | 309 | 296 | 289 |
| Fuel (petroleum) (kl) | 28.7 | 28.6 | 29.5 | 30.9 | 31.9 | 31.6 | 32.9 | 25.4 | 27.3 | 29.1 |
| Water ($km^3$) | 57 | 73 | 54 | 51 | 54 | 51 | 50.2 | 54.6 | 54.9 | 58.0 |
| Outputs | | | | | | | | | | |
| $CO_2$ (tons) | 4,015 | 3,947 | 3,739 | 3,700 | 3,851 | 4,051 | 3,917 | 3,714 | 3,546 | 2,656 |
| Wastewater ($km^3$) | 57 | 73 | 54 | 51 | 54 | 51 | 50.2 | 54.6 | 54.9 | 58.0 |
| Non-industrial waste (tons) | 227 | 269 | 223 | 206 | 218 | 262 | 264 | 224 | 196 | 183 |
| Industrial waste (tons) | 437 | 447 | 412 | 292 | 394 | 324 | 364 | 253 | 248 | 149 |
| Recycling rate (%) | 98.9 | 98.8 | 99.0 | 99.4 | 99.5 | 99.6 | 99.4 | 99.3 | 99.2 | 98.8 |

*1 The Company has applied the Partial Amendments to Accounting Standard for Tax Effect Accounting (ASBJ Statement No. 28, February 16, 2018) from the start of fiscal 2019. Management indicators and other important data related to fiscal 2018 have been retroactively revised to reflect this newly applied standard.
*2 Financial data is presented on a consolidated basis, while non-financial data is presented on a non-consolidated basis.
*3 Orders received are exclusive of consumption tax and other taxes.
*4 Net sales are exclusive of consumption tax and other taxes.
*5 The dividend per share for the fiscal year ended March 31, 2014, which amounted to 16 yen, included a commemorative dividend of 2 yen for the 85th anniversary of the foundation of Nippon Signal Co., Ltd.
*6 The dividend per share for the fiscal year ended March 31, 2019, which amounted to 25 yen, included a commemorative dividend of 1 yen for the 90th anniversary of the foundation of Nippon Signal Co., Ltd.
*7 The number of employees includes staff on loan from other companies to Nippon Signal, and excludes Nippon Signal staff on loan to other companies and temporary employees.
*8 The figures for the environmental data are those for the sites of Kuki Plant, Utsunomiya Plant, Ageo Factory, Yamagata Nisshin Electronics Co., Ltd. and Nisshin Tokki Co., Ltd.

# Corporate Data

## Corporate Overview (as of March 31, 2023)

| | |
|---|---|
| Name of Company: | Nippon Signal Co., Ltd. |
| Date Established: | December 27, 1928 |
| Paid-in Capital: | ¥10 billion |
| President and CEO: | TSUKAMOTO Hidehiko |
| Number of Employees: | 2,987 (consolidated) |
| Accounting Auditor: | Grant Thornton Taiyo LLC |

### Overseas Offices

Taipei Branch　Dhaka Office　Yangon Office

### Consolidated Subsidiaries

Nisshin Electronics Service Co., Ltd.
Nisshin IT Field Service Co., Ltd.
Sendai Nisshin Electronics Co., Ltd.
Chubu Nisshin Electronics Co., Ltd.
Nisshin Industry Co., Ltd.
Tochigi Nisshin Co., Ltd.
Nisshin Tokki Co., Ltd.
Nisshin Software Engineering Co., Ltd.
Nisshin Electric Construction Co., Ltd.
Yamagata Nisshin Electronics Co., Ltd.
Sapporo Nisshin Electronics Co., Ltd.
Fukuoka Nisshin Electronics Co., Ltd.
Asahi Electric Co., Ltd

### Non-Consolidated Subsidiaries

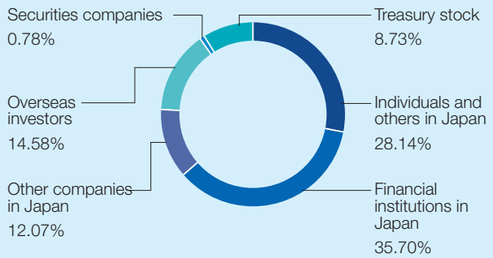
Nisshin Enterprise Co., Ltd.
Nisshin Okabe Nikoh Co., Ltd.
Nisshin TECHNO Engineering Co., Ltd.
Nisshin Hutech Co., Ltd.
Saitama Union Service Co., Ltd.
Yokohama Techno Engineering Service Co., Ltd.
Hokumei Electric Industry Co., Ltd.
Beijing Nippon Signal Co., Ltd.
Nippon Signal India Pvt. Ltd.
Nippon Signal Technology Taiwan Co., Ltd.
Nippon Signal Bangladesh Pvt. Ltd.

For further details, please refer to our website.
➡ **https://www.signal.co.jp/english/aboutus/branch.html**

## Stock Information (as of March 31, 2023)

| | |
|---|---|
| Number of Shares of Common Stock Issued: | 68,339,704 |
| Stock Exchange Listings: | Tokyo Stock Exchange, Prime Market |
| Number of Shareholders: | 13,021 |
| Shareholder Registration Agent: | Mizuho Trust & Banking Co., Ltd. |

### Distribution of Shares by Shareholder Category




### Major Shareholders

| Shareholder | Number of Shares Held (thousand) | Investment Ratio (%) |
|---|---|---|
| The Master Trust Bank of Japan, Ltd. (trust account) | 6,693 | 10.73 |
| Fukoku Mutual Life Insurance Company | 4,793 | 7.68 |
| Nippon Signal Group Employees Shareholding Association | 4,027 | 6.46 |
| The Nippon Signal Trading-Partner | 3,285 | 5.27 |
| Mizuho Bank, Ltd. | 2,200 | 3.53 |
| West Japan Railway Company | 2,050 | 3.29 |
| Custody Bank of Japan, Ltd. (trust account) | 1,988 | 3.19 |
| GOVERNMENT OF NORWAY | 1,855 | 2.98 |
| MUFG Bank, Ltd. | 1,372 | 2.20 |
| Aioi Nissay Dowa Insurance Co., Ltd. | 1,334 | 2.14 |

*1 Fukoku Mutual Life Insurance Company has placed 730,000 shares of Nippon Signal stock in a retirement benefit trust separate from the aforementioned shares it holds. It reserves the right to give instructions on how to exercise related voting rights.
*2 5,968,270 treasury shares have been deducted for the purpose of calculating the investment ratio.

### Domestic Offices and Plants

Head Office
Shin Marunouchi Building, 1-5-1 Marunouchi, Chiyoda-ku, Tokyo
100-6513 Japan
Phone: +81-3-3217-7200 Fax: +81-3-3217-7300

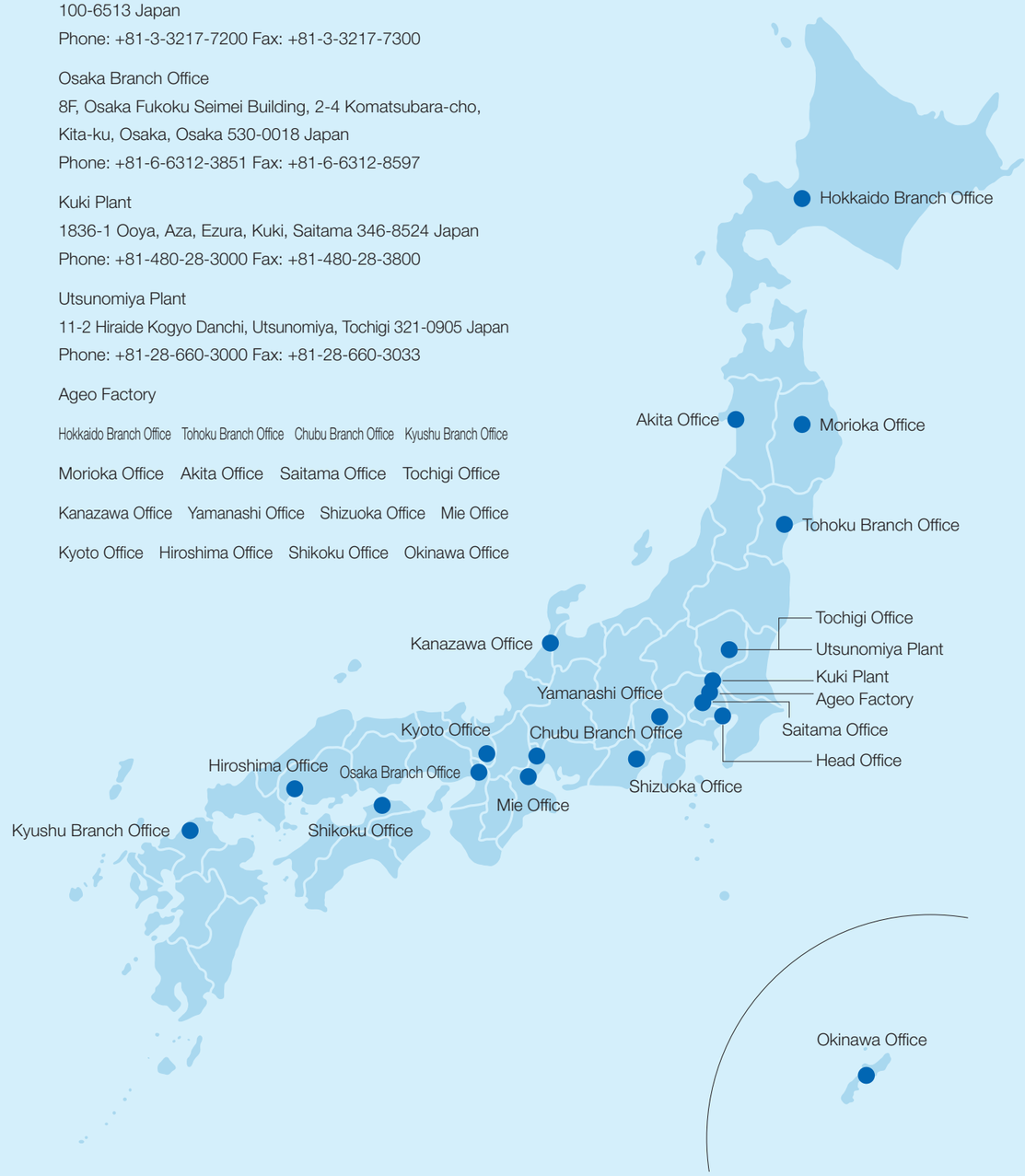
Osaka Branch Office
8F, Osaka Fukoku Seimei Building, 2-4 Komatsubara-cho,
Kita-ku, Osaka, Osaka 530-0018 Japan
Phone: +81-6-6312-3851 Fax: +81-6-6312-8597

Kuki Plant
1836-1 Ooya, Aza, Ezura, Kuki, Saitama 346-8524 Japan
Phone: +81-480-28-3000 Fax: +81-480-28-3800

Utsunomiya Plant
11-2 Hiraide Kogyo Danchi, Utsunomiya, Tochigi 321-0905 Japan
Phone: +81-28-660-3000 Fax: +81-28-660-3033

Ageo Factory

Hokkaido Branch Office　Tohoku Branch Office　Chubu Branch Office　Kyushu Branch Office
Morioka Office　Akita Office　Saitama Office　Tochigi Office
Kanazawa Office　Yamanashi Office　Shizuoka Office　Mie Office
Kyoto Office　Hiroshima Office　Shikoku Office　Okinawa Office



NIPPON SIGNAL

Shin Marunouchi Building, 1-5-1 Marunouchi, Chiyoda-ku, Tokyo 100-6513 Japan
Phone: +81-3-3217-7200 Fax: +81-3-3217-7300 E-mail:info@signal.co.jp